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WRITINGS OF GABRIEL COMPAYRÉ

TRANSLATED BY

WILLIAM H. PAYNE, PH.D., LL.D.

THE HISTORY OF PEDAGOGY

WITH INTRODUCTION AND NOTES

LECTURES ON TEACHING

WITH INTRODUCTION AND NOTES

PSYCHOLOGY APPLIED TO EDUCATION

WITH INTRODUCTION AND NOTES

OTHERS IN PREPARATION

D. C. HEATH & CO., PUBLISHERS

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PSYCHOLOGY

APPLIED TO EDUCATION

BY

GABRIEL COMPAYRÉ

DEPUTY, DOCTOR OF LETTERS, AND RECTOR OF THE ACADEMY POITIERS

TRANSLATED BY WILLIAM H. PAYNE, PH.D., LL.D.

CHANCELLOR OF THE UNIVERSITY OF NASHVILLE, AND PRESIDENT OF THE PEABODY NORMAL COLLEGE

BOSTON, U.S.A.

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TRANSLATOR'S PREFACE.

Monsieur Compayré himself no longer needs an introduction to the American educational public, for his books have been as extensively read and appreciated in this country as in France. With the possible exception of Page's *Theory and Practice of Teaching*, Compayré's *History of Pedagogy* has probably had more readers than any other educational work published in this country within the last ten years. This book marks an epoch in the professional literature of teaching, for it has created a taste and a place for the historical study of education which are likely to remain as a permanent endowment of the teaching profession.

Breadth of view, sobriety of judgment, critical insight, and perspicuous statement, are the sterling qualities that pervade all of M. Compayré's books. They bear evidence of wide reading, and at the same time of originality taken in its best sense,—the assimilation of material drawn from a wide field of exploration and the creation of an organic whole by the processes of independent thinking. Such books are valuable, not only for the light they throw on the art of teaching and educating, but for their wholesome stimulus to personal reading and reflection.

Mr. Bain is doubtless right in saying that the largest chapter in the science of education is psychological; but as Psychologies are usually written there is much in them which is not convertible into guidance for the teacher's use. A mere cyclopædia of mental science, written by an analyst who makes an exhaustive description and classification of mental phenomena, is practically useless for teachers who are in search of light and help in their art. For this purpose the mind must be conceived, not as an inert object to be dissected, but as a living organism manifesting the phenomena of assimilation and growth. The teacher needs

to know, in their proper function and sequence, the major movements of the mind as it is engaged in the act of learning. This, in the main, is M. Compayré's mode of interpreting psychology, and to this is due, in its mode of treatment, the peculiar excellence of this manual. In its statement of doctrine and application it is profound without being obscure, and simple without being commonplace. There are thousands of teachers who have neither the taste nor the leisure to master the details of educational science, nor even to read the profounder treatises on the science and art of teaching, but who are sincerely anxious to find a rational basis for their art; and for all such I know of no book that I can commend so heartily as Compayré's *Psychology Applied to Education.*

I have ventured to supplement the original work of M. Compayré by adding Chapter XV., in which I have attempted to present a synoptical view of the main phases of the mind's activities when engaged in learning. I hope it may serve as an aid in interpreting the preceding chapters, and as a guide to teachers in their subsequent studies. It is a mere outline, and should be accepted as such only.

In the preparation of this book for the press I have been aided at every step by Professor Wickliffe Rose, A.M., of the Peabody Normal College, and I am glad to make this public acknowledgment of his valuable assistance.

W. H. PAYNE.

NASHVILLE, TENN., January 10, 1893.

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PSYCHOLOGY

APPLIED TO EDUCATION.

A.—PHYSICAL EDUCATION.

CHAPTER I.

GENERAL HYGIENE.

General Considerations.—It is not merely for the purpose of gaining a theoretical knowledge of the laws of human nature that we have just studied the elements of psychology:[1] our aim was especially to prepare for the study of pedagogy. If it is important, indeed, to know man, it is not so much to be able to enumerate learnedly his different psychological functions, as to be able to succeed practically in elevating him, in moralizing him. Pedagogy and ethics are simply applied psychology.

To undertake the direction of education without having analyzed the faculties of human nature, would be to run the risk of committing the grossest errors; it would be to go astray, to walk at random like a traveller in an unknown country without a map before him. On the other hand, equipped with proper psychological observations, the edu-

[1] *Psychologie appliqué à L'Éducation: Notions Théoriques.*

cator is prepared to determine the theoretical and general laws which govern the development of mind and character; and, moreover, what is not less important, he is prepared easily to discern the tendencies and inclinations which are peculiar to the individual nature of each of his pupils. It is not possible to act effectively on the character of a child until we have come to know it. Now, without the key which psychology puts into our hands, the child would remain to us an insoluble enigma.

Let us, therefore, turn to account the knowledge acquired by the study of psychology. By adding to this some elementary notions of anatomy and physiology, we shall have collected all the principles with which to construct the science and art of education.

Different Divisions of Education.—From the knowledge of man, the duality of body and mind, and from the diversity of the mental faculties, it follows that education comprises several divisions, which correspond to the essential divisions of the human being. "The end of education," says Laboulaye,[1] "is to permit each individual to attain the most complete development of his body, mind, and heart." Or again, as we have expressed it, "Education is the sum of the reflective efforts by which we aid nature in the development of the physical, intellectual, and moral faculties of man."[2] In other words, there is a *physical education*, an *intellectual education*, and a *moral education*, really distinct from each other, the first tending to develop and strengthen the body; the second, to cultivate the intellectual faculties and impart positive knowledge; the third, to form the heart and the will.

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[1] Laboulaye, *Les méthodes d'enseignement*, 1877.

[2] See Compayré's *Lectures on Teaching*, pp. 12, 13.

But on the other hand, psychology has taught us to recognize, in the diversity of functions, the unity of the human being, the solidarity of all the faculties. From this it evidently follows that the different divisions of education should aid one another, each complementing the others, and all harmoniously coöperating in the same work.

The higher emotions and the strength of character which moral education seeks to guarantee to us, depend, in part, on the soundness of judgment and the firmness of knowledge which are the proper end of intellectual education.

Is it not evident, on the other hand, that the intellectual faculties expand more safely under shelter of a pure heart and a sound will? And, finally, by reason of the intimate relations between the physical and the moral, it is no less evident that a robust and sound body is the necessary condition of the intellectual and moral development of man.

Importance of Physical Education.—We shall say nothing new in affirming that a vigorous crusade is now taking place in favor of physical education.[1] This movement of opinion has its explanation in several causes:

1. Owing to the progress of science, we have come to appreciate better than we formerly did the truth of the old adage: *mens sana in corpore sano*, a sound mind in a sound body. We are no longer to believe, as did the mystics of the Middle Age, that, in order to strengthen the mind, the body must be impoverished and weakened. The correlation of physical energy and mental power is an established fact.

[1] Among other facts, to say nothing of books, we mention the organization of the "Society for the Propagation of Physical Exercises," Jules Simon, president, and of the "National League of Physical Education," M. Berthelot, president.

2. The growing demands of courses of study, the intensity of the intellectual labor imposed upon the rising generation in a society where the struggle for existence is every day becoming fiercer and where the victory falls to the best instructed, and lastly the cerebral fatigue resulting from these,—all this warns the educator that it is more and more necessary to compensate and offset this larger expenditure of mental force by a judicious corrective of play, recreation, hygienic attention, and by everything that may serve to consolidate the physical forces.

3. On the other hand, in the general conditions of modern life, the inevitable deterioration of health in the crowded population of large cities, the refinements of civilization, the pernicious influences of alcoholism, in everything that tends to degrade the human species, to say nothing of a fatal decadence of a worn-out race, we find a series of new reasons for striving against physical degeneracy by a more attentive and rational culture of the bodily organs and functions.

4. Finally, we are coming every day to appreciate more and more the expediency of introducing into education a practical preparation for professional life. Manual employments justly hold a place of honor in the school. Even princes learn a trade: the Emperor of Germany, it is said, is a bookbinder. But what is only a recreation and whim for some is a necessity for others; hence there is a virtual obligation to develop through physical education the qualities of agility and skill, manual dexterity, quickness of movement; in a word, everything that makes a good workman.

End of Physical Education.—From these considerations, it follows that physical education has for its general end

the *health* and *strength* of the body, and for its incidental end, *skill*. Let us add to this, *beauty*, after the example of the ancient Greeks, who sent their children to the gymnasium, not merely to supple the members, to harden the muscles, but also to develop the plastic forms of the body.

To be in good health, to be vigorous and robust, to be skillful with the hands and the fingers, and, if we can, to be beautiful and to remedy as far as possible those infirmities which disfigure and deform, — such are the demands of physical education. Doubtless, it is nature, often, which puts us in an attitude to conform to them by the gifts which it bestows upon us, by the temperament and constitution with which it endows us at birth; but human art also affords certain means for aiding us in preserving and increasing the benefactions of nature or in correcting its defects.

Different Means of Physical Education. — The various means which physical education may employ are summed up in two words, *hygiene* and *gymnastics*.

On the one hand, there are certain precautions to be taken and certain principles to be observed, in order to maintain the bodily organs and vital functions in their integrity. This is the distinctive end of hygiene.

On the other hand, the body, as well as the mind, needs movement, exercise, activity; and this purpose is served by gymnastics, play being also included in this term.

Hygiene. — Hygiene is, as it were, the ethics of the body, a code of prohibitions and imperative precepts, either forbidding whatever is harmful, or recommending whatever is wholesome.

It may be defined as *the art of preserving the health*, but it is also the art of promoting the health. There is, in

fact, health and health. As Pécaut has observed, "Our pupils may not be ill, but this is not saying that they are well."[1] There are numbers of people in the world whose health is so precarious that they are content to escape death. But these sickly and suffering existences do not suffice for the rude labor of life. We should demand of hygiene a health that permits us to live completely, to meet all our obligations, and especially to avoid being, in the least, a burden or an occasion of perpetual anxiety to those who surround us and love us. We are culpable if, by our imprudence, we shorten our life and are taken prematurely from our family, which is dependent upon us. We are guilty also, if, through lack of care, through thoughtlessness, through voluntary or involuntary disobedience to the laws of hygiene, we sacrifice our health, and are not able to acquire the strength necessary for the performance of all our duties. "Nothing facilitates the dispatch of business," says Bacon, "so much as good health; unstable health too often forces vacations upon us."

Hygiene, according to Rousseau, is not so much a science as a virtue. In reality, it is first a science founded on the laws of life; and when practiced, it becomes a virtue, which Mr. Spencer rightly calls *physical morality*.

Our first duty is, in one sense, to live, and to live a long time. Now, it often happens that a man does not die, but kills himself. He does this because he has not followed the precepts of hygiene, that preventive medicine which, in a certain measure, enables us to dispense with all others.

Hygiene According to Horace Mann. — Horace Mann, with his usual eloquence, pled the cause of hygiene before his fellow-countrymen, and won it, since, in 1842, he succeeded

[1] *Hygiène des écoles primaires*, Paris, 1884, p. 301

in getting instruction in elementary hygiene admitted into their courses of study. He had learned to pity both those who, young or old, die prematurely, and those who prolong in a state of infirmity or illness, a languishing existence painful to themselves and useless to others. How many young lives are cut down in tender years! And how many millions through feeble health are lost to family and society! Allowance being made for nature and inevitable fatalities of constitution, is it not still true that many of those maladies and these premature deaths might have been avoided if there had not been, through ignorance or voluntary neglect, a transgression of the laws of health and life?

"Three quarters of a century ago," says Horace Mann, "the fact of the identity of electricity and lightning was known to scarcely a dozen men in the world. Now it is not only a matter of universal knowledge among the educated, but even children are familiar with it; and every individual in the country participates in the practical benefits of the discovery of Franklin. In the same way an acquaintance with the fundamental laws of health and life may be and must be popularized. The reasons are far stronger in the latter case than in the former; for where lightning has ever destroyed one victim or one dollar's worth of property, the infraction of the physical laws has destroyed its thousands of lives and its millions of wealth. . . . , The greatest happiness and the greatest usefulness can never be attained, without that soundness of physical organization which confers the power of endurance, and that uninterrupted enjoyment of health which ransoms the whole of our time and means from sickness and its expenditures. In the great work of education, our physical condition, if not the first step in point of importance, is the first in the order of time. On the broad and firm foundation of health alone can the loftiest and most enduring structures of intellect be reared; and if on these sublime heights of intellectual eminence the light of duty and benevolence, — of

love to God and love to man,—can be kindled, it will send forth a radiance to illumine and bless mankind."[1]

General Hygiene and School Hygiene.—Hygiene has precepts for all men, rules applicable to all ages and conditions; this is called *general hygiene.* But it has also special precepts for the different conditions of life; it adapts its rules to the different environments in which we are called to live. We have military hygiene, industrial hygiene, rural hygiene, etc., and especially *school hygiene.*

School hygiene treats first of the different material conditions of the school—the location, construction, lighting, heating, etc. In the second place, it addresses itself directly to the student, tracing for him a line of conduct in whatever concerns the duty of cleanliness, meals, clothing and sleep.

We shall not enter here into the details of these rules. A few general observations will suffice as a preparation for their study.[2]

Above all, let us remember that we are not simply to adopt in the interest of our children and our pupils all the measures which hygiene enjoins, but rather to accustom them to comprehend their importance and to observe them in whatever they have to do.

Physical Education according to Herbert Spencer.—Of all the modern writings on this subject, that which may best serve as an introduction to our study is certainly Herbert Spencer's essay on physical education. Mr. Spencer, like all his countrymen, attaches an extreme importance to physical education. Since the time of Locke, it has been one of the

[1] *Sixth Annual Report of the Board of Education of Massachusetts*, p. 159–60.

[2] See *Le programme d'hygiène* for normal schools.

traditions of English pedagogy to take great care of our "house of clay."[1] England alone could have given rise to a sect professing *muscular Christianity*, which succeeded a few years ago in calling together a number of adherents, who, through pious motives, attempted to strengthen their body, just as the Christian ascetics of former times mortified and enfeebled the body through similar motives.

Mr. Spencer, opposing the negligence which is too common to parents when the physical education of their children is concerned, points out the zeal which animates these same parents when it is a question of raising animals.

A French author, Eugene Paz, had already made the same observation:[2]

"Propose to a father, elector, candidate, or even an officer elect, to restrict the hygienic regimen of his horse or his ass to the amount of physical exercise and material attention that he finds sufficient for the health and development of his son, who is a pupil in some institution of learning, and he will revolt, declaring that it is necessary to apportion to the domestic animals fresh air and movement just as well as hay and oats."

The reflections of Mr. Spencer, often just and always pungent, bear on such questions as food, clothing, physical exercise, the effects of over-study, and excessive cerebral excitement.

As concerns diet, he maintains that the food of children should be abundant, varied, and highly nutritious. He states the principle that "the degree of energy depends essentially on the nature of the food." In direct opposition to Locke, who favors proscribing meat from the dietary of children, he affirms, from his own experience, that six

[1] *Thoughts on Education*, p. 3.

[2] E. Paz, *La gymnastique raisonnée*, *1876*, p. 2.

months' purely vegetable diet permitted him to verify the fact of a corresponding diminution in energy of both body and mind. Mr. Spencer is right in saying that "eating too much and eating too little are both bad," and in insisting on the danger of insufficient nourishment; but we do not agree with him that there is an exact and absolute ratio between the quantity or variety of nourishment and the development of mental energy. And when we think of all the families to which poverty forbids even a pretension to the luxury of an abundant and varied diet, we find some pleasure in thinking that Mr. Spencer exaggerates, and that a substantial diet, of whatever kind, satisfies the needs of the body. Mr. Spencer is wrong again, when, proclaiming the infallibility of instinct, he advises parents to satisfy without restriction the appetites of their children. In the matter of appetite, as in everything else, the natural tastes are by no means a sure guide; they often go astray, become depraved, and tend easily to exaggeration, and gluttony, for example, is not an inappropriate term.

Mr. Spencer's observations on clothing—and here we heartily agree with him—proceed on the same principle, namely: that we should rely upon sensations, should observe nature, which demands warmth of clothing, and not fashion, which sometimes delights in light and insufficient costumes.

"Our observations are, then, that while the clothing of children should never be in such excess as to create oppressive warmth, it should always be sufficient to prevent any feeling of warm or cold; that instead of the flimsy cotton, linen or mixed fabrics commonly used, it should be made of some good non-conductor, such as coarse woollen cloth; that it should be so strong as to receive little damage from the hard wear and tear which childish sports will give it; and that its colors should be such as will not soon suffer from use and exposure."[1]

[1] Spencer's *Education*, p. 251.

Cleanliness. — Cleanliness and care of the skin are no less necessary to health than sufficiently warm clothing, or wholesome, substantial food. Water is to the skin, say hygienists, what air is to the lungs. Hence, in certain religions, the sacred and obligatory character of the ablutions.

Daily attention to cleanliness and frequent baths, hot or cold, according to the season; these are the requirements demanded by our appearance and our dignity, not less than by the consideration of health. Imperative as are these obligations for all people, they are still more so for children crowded together in the same schoolroom, and, consequently, more exposed to contagious diseases.

The duty of looking after the cleanliness of children, doubtless, belongs chiefly to the family; but the teacher may exercise a useful supervision by the daily inspection which the law requires him to make, and also by the recommendations which it is his duty to address to families.

"To the objections which poor parents may make to him, the teacher will reply that one does not need to be rich in order to be clean; that, moreover, cleanliness being the only luxury which is allowed the poor, parents should give their children at least this luxury; and as it requires but little money to clothe a child properly, so it requires but little time to see to it that he takes care of his clothes and his person.

"I will add that man is most often physically as well as morally what his education has made him, and that if children contract early habits of cleanliness, it is a guaranty of health, that is, of strength for the work which they have to do in youth."[1]

Temperance.—Hygiene does not content itself with rec-

[1] See *Hygiène des écoles primaires*, p. 206; *Projet d'instruction*, by M. Jacoulet.

ommending a certain number of formal practices; it appeals also to the moral powers of man, to determine him to live temperately, to use moderation in all things.

The general principle of all hygienic prescriptions is that we should constantly apply the old adage: "avoid excess." The beginning of wisdom, in physical as well as in moral education, is to *use without abusing*, to avoid excesses, to seek the golden mean, and to adapt one's activities to his powers and his circumstances. The evil is not in drinking when we are thirsty, nor in eating when we are hungry: it is in drinking and eating more than we need. The evil is not in the inveterate use of tobacco, but in using it to excess. Intemperance under all its forms is fatal to health, as much so in cases of intellectual exercise as in the immoderate gratification of bodily appetites. And it suffices that we give loose reins to a single one of our passions in order that through this one fissure infirmities and diseases penetrate the organism, thus rendering useless the efforts which we have made in all other directions to conform to hygienic laws.

Privations.—To be temperate is not simply to use things with discretion and moderation; it is to be able to do without them when necessary. Our physical education is incomplete if it has not accustomed us from childhood to accept, when circumstances demand it, a momentary renouncement of the comforts and ordinary conveniences of life. A soldier who has not accustomed his stomach to bear a few hours of hunger makes a sorry figure on the march. On the other hand, while we do not wish to revive ancient asceticism in our manners, let us guard against falling into the opposite extreme and sacrificing too much to our physical wants. In a body too highly nourished, immorality

indulges in wild excesses and sudden revolts. Evil and brutal passions lodge there as though at home; and while we no longer wish bodies impaired by maceration and prolonged fasting, we also distrust temperaments heated and overexcited by excessive diet, rich food, and the daily gratification of the bodily appetites. It is not simply effeminacy or lack of vigor that is to be feared in such cases; it is worse than that—it is the violent reappearance of beastly instincts.

There is one chapter lacking in the writings of modern hygienists, namely: that on privations. In former times they were abused; yet it would be wise not to renounce them altogether. Even Comte recognized that there was good in those religious precepts which recommended men to submit voluntarily to systematic privations.[1]

"The hygienic practices," says he, "imposed by Catholicism, besides their indirect value in maintaining wholesome habits of moral submission and voluntary restraint, were the happy auxiliaries of education in general."

The Laws of Health and of Life.—We are very far from having reviewed all the subdivisions of hygiene. It will teach us further how to regulate our sleep, and to divide our time between labor and repose. It is from hygiene, also, that we learn what conditions of air and light are most favorable to health. In a word, there is not a single function of organic life for which the science of hygiene has not some useful and valuable precept.

But what is even more important than having studied these rules, is to acquire the conviction that there are in the world of life, as well as in external nature, fixed and invariable laws which *may* be known, and which *must* be

[1] Comte, *Cours de philosophie positive*, t. v. p. 307.

observed; laws which, if we are so unfortunate as to break them, avenge themselves by disease and death. Let us free ourselves from that mistaken idea by which life is still represented as a theater of chance, and which admits that the body may with impunity be given up to every fancy and caprice. Once impressed with the truth that life has its laws, just as gravitation or electricity has, it will be easy for us, by the aid of professional books and our own experience, to determine in detail the special rules which, when combined, constitute a good hygienic guide.

SUMMARY.

1. The science and the art of education suppose the knowledge of human nature. Pedagogy is only applied psychology.

2. There are three divisions in education: physical education, intellectual education, and moral education. These are founded on the three essential divisions in the human being: the organs and the functions of the body, the intellectual faculties, the emotions and the will.

3. The importance of physical education results from the close relations which unite the mind and the body. At the present day its importance has increased for several reasons: 1, the more intense intellectual effort required by continually enlarging the courses of study; 2, the various causes which go to weaken the native vigor of the constitution; 3, the necessity of preparing in school for the attainment of professional skill.

4. Physical education has a threefold end: health, strength, and skill.

5. The means at the disposal of physical education may be summed up in two words: hygiene and gymnastics.

6. Hygiene is the art of preserving and promoting health.

The prescriptions of hygiene constitute a kind of preventive medicine, which shields us from a great number of diseases and gives us the means of prolonging life.

7. Without health, neither can the individual aspire to happiness, nor the citizen completely fulfil his social duties.

8. General hygiene establishes the rules which are applicable to all conditions of life; school hygiene treats of the physical conditions of the school and the regimen of the pupil.

9. As Mr. Spencer demands, food ought to be, as far as possible, abundant and varied; clothing should be warm.

10. Cleanliness of body and clothing is an element of health as well as a duty of personal dignity.

11. The fundamental principle of hygiene is, in everything be temperate and avoid excesses.

12. Temperance does not consist simply in using things in moderation; it teaches us to do without them when necessary.

13. That which should govern our study of hygiene is the conviction that it is truly a science, establishing the laws of health and life, laws which cannot be infringed with impunity.

CHAPTER II.

THE PLAYS AND EXERCISES OF CHILDREN. — GYMNASTICS.

Hygiene and Physical Exercise. — There is a hygiene of preservation, which seeks the means of protecting the organs of life, of assuring the regular progress of the functions of nutrition, respiration, etc. But there is also a hygiene of action, so to speak, which seeks more particularly to strengthen the body, to develop and supple its members by exercising them. Exercise, or rather physical exercise, in all its forms, is the essential condition of this positive hygiene, which is the true organizer of the body, or at least nature's necessary co-laborer in the work of organizing our bodily forces.

Necessity of Bodily Exercise. — Just as our moral faculties are developed by exercises in reading, meditation or composition, so our physical faculties are developed, either by the systematic exercise of gymnastics, or by the less constrained exercise of playing and walking.

Physiologists state that the demand for exercise is no less imperative than the demand for food, and they are with good reason astonished that this particular need of the body has not received a special designation, to which it has as good a right as *hunger* or *thirst*.[1]

[1] Dr. F. Lagrange. *Physiologie des exercises du corps.* — Paris: Alcan, 1888.

Let us analyze the results of physical exercise, and we shall be convinced that physical activity contributes in more than one way to the health of the body and of the mind.

The first advantage to be gained from physical exercise is, that while the muscles are being exercised the brain and nerves are left at rest; the mind is allowed to regain its forces; the equilibrium between physical and intellectual development is restored. The best remedy for what is called over-work is to multiply the pupil's plays and recreations.

But physical exercise has also a direct and immediate effect both on the body and on the mind itself.

As for the body, it is evident at once that exercise strengthens the muscles. The muscles, under the influence of a well-directed daily exercise, become, not only larger and firmer, but also more contractile, and consequently more capable of responding vigorously to the excitations of the will.[1] Since the muscles are the immediate agents of movement, and play a part in every kind of physical activity, the youth soon acquires thereby greater strength and agility. But, on the other hand, exercise influences the whole organism. It stimulates the functions of circulation; it sharpens the appetite and accelerates the processes of nutrition; it removes those obstructions, such as *fat*, which embarrass and encumber the working of the human machine. In a word, it gives increased activity to the organic life in all its functions, and thereby develops the organs themselves, according to a well-known law which says that "the function makes the organ." In this way, again, exercise is a source of health and strength.

For the mind, also, physical exercises are helpful, not

[1] *Ibid.*, p. 181.

only because they leave the mental faculties time to recuperate in repose, as we have already observed, but also because, by reason of the relations no less certain than mysterious which connect thought with the brain, and the brain with the entire organism, it renews and nourishes the deep and obscure sources of the intellectual life. One needs simply to observe himself after a walk or a social game, to see that it is not the body alone which has profited by the physical exercise, but thought has become clearer, feeling more ardent, and imagination more vivid. Observe children after playing; ardor in sport is followed by ardor in study. Under one condition, however, that the exercise has not surpassed proper limit. Sports too violent or too prolonged would waste the mental forces and prevent the mind from recuperating; but moderate exercise gives it animation and life.

Physical Courage.—It is not only the health of the intelligence but still more the energy of the will that is maintained and increased by the habitual practice of physical exercise. It is known, moreover, that courage is affected by bodily vigor. With a feeble body, how hope to be a hero, or even to appear brave in the presence of danger? Intrepidity, on the contrary, and a courageous bearing in the midst of danger, are things easy enough when the will has at command a body of iron and muscles of steel. But this is not all. Physical exercise and muscular activity do more than secure to the will its instruments or tools; they develop and perfect the will itself. The child or the man who accustoms himself daily to experience bodily fatigue, and who with ardor sustains an energetic muscular effort, becomes more capable of willing; he acquires, not only more muscle, but also more mental energy. This is

why General Thomassin could say to Jules Simon, on coming from the exercises of the gymnasium or play-ground: "It is moral strength that we are going to develop."

Choice of Exercises. — There are a thousand ways of exercising one's self. Muscular labor is the same for the farmer who tills his land, as for the gentleman who fences. If the first wears out while the other grows strong, it is because the man of the world sleeps well and eats bountifully, while the peasant eats insufficiently and rests but little. This result is especially due to the fact that the fencing is only an hour's recreation for the first, while for the second his work is prolonged throughout the day.

The first rule to follow, therefore, in the choice of exercises, is to give preference to moderate exercises which do not require an excessive expenditure of muscular force; and also when indulging in violent exercises, in themselves very fatiguing, to know when to stop, and not to prolong nor repeat them beyond measure.

Another important rule is to choose exercises which benefit all parts of the body at the same time. Just as the best foods are those which physiologists call *complete foods*, that is to say, those which contain all the substances necessary to nutrition, so the best exercises are those which call into activity the greatest number of muscles at one time. Specialization is detrimental in the education of the body as well as in that of the mind. Who exercise more than dancers? But as scarcely more than their limbs are called into play, the benefit realized to the physical constitution as a whole from this muscular activity is by no means proportioned to their exertion.

Again, we are told by physiologists that the most health-

ful physical exercises are those which demand the least intellectual efforts. For a given amount of muscular labor, they say, the sensation of fatigue is the more intense in proportion as the exercise requires the more active intervention of the mental faculties; hence, preference should be given to exercises which do not demand sustained attention, which are performed mechanically or automatically, as walking, for example.

Let us observe, however, that there may be at times some interest in combining intellectual activity with muscular exercise, as happens in recreations and games, in which free play is given to the child's imaginative and inventive genius. But so far as strengthening the organs is concerned, these mixed exercises, so to speak, could not pretend to the same efficacy as the purely physical exercises, freed from all intellectual tension.

Gymnastics.—Gymnastics, strictly speaking, is a rational choice of exercises, a regular and systematic culture of the body. It is to physical activity what a good course of study is to intellectual activity. It may be defined as *the art of exercising the physical faculties.*

As has very justly been said: "The ordinary disordered and unsystematic plays, with their inconveniences, cannot replace gymnastics; and, conversely, gymnastics, regular and systematic, as it is, should by no means exclude the plays in which children abandon themselves to all the frolics of their age."[1]

In the choice and successive organization of its exercises, gymnastics is inspired by the rules which we have marked out, and by some others.

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[1] M. Barthélemy Saint-Hilaire. Preface to *Gymnastique Pratique de Laisné.* p. 9.

It varies the exercises which it imposes, so that all the members may be called into action. It causes movements of the limbs to be followed by arm movements; it recommends in turn standing, swinging, and bar exercises. It employs ropes, machines, and every skillful combination of apparatus, so as to give occasion for the exercise of every muscle.

On the other hand, when it is wisely administered, it does not abuse these machines, nor the too complicated and difficult exercises of the art. It gives a marked preponderance to standing movements, to walking and running, to those simpler exercises which are more in conformity with nature, and which are none the less beneficial.

Finally, it does not forget that it is a means and not an end. It is not proposed to train professional athletes, or gymnastic experts in feats of strength; the aim is simply to make gymnastics serve the general education of the body, just as the study of the sciences is adapted to the general education of the mind. Gymnastics looks to the same end as hygiene: it aspires to perfect the organism from the triple point of view of health, strength and skill.

History of Gymnastics. — It has by no means been left for our century to discover that children need activity and exercise. Nowhere has gymnastics been honored more than among the Greeks. At Athens the gymnasium was frequented no less than the school. Not only the victors in the contests in poetry and eloquence were crowned on the Agora; but almost divine honors were there paid those who had excelled in running, boxing, and wrestling. At Rome, in the early period, men, both young and old, came every day to exercise on the Field of Mars; and up to the

last, the custom of gladiatorial combats shows that the Romans never lost their taste for physical exercises.

In the Middle Age, notwithstanding the mystic tendencies of a misconceived piety, chivalry, with its tilts and tournaments, is an evidence that gymnastics had not lost all its claims, at least among the privileged of the higher class.

In the seventeenth century, Fénelon declares that the most essential thing in the first years of life is to take care of the child's health; and the Abbé Fleury, a friend of Fénelon's, writes as follows:

"It is conducive to good health to be clean and neat, to breathe pure air, drink good water, and eat simple food; and although nature teaches us all these things clearly enough, it is well to admonish children concerning them, and to have them make of these considerations objects of frequent thought; for they easily become matters of habit. Whatever gives strength is very conducive, also, to health, which strength necessarily presupposes. Now, strength is not gained, as the masses think, by eating heartily, and drinking much wine, but by working and exercising, and by taking nourishment and rest in due measure. The exercises best adapted to everybody are: prolonged walking and standing, carrying burdens, drawing with pulleys, running, vaulting, swimming, riding on horseback, fencing, tennis-playing, and so on, according to age, and to the condition or profession for which each one is destined. I leave the details to those who may some day consent to give us a treatise on exercises: I simply make this observation, that it is very important to give children at an early age a great love for exercise."[1]

This *treatise on exercises*, which the pedagogy of the seventeenth century was already demanding, has been written by our contemporaries; and gymnastics is henceforth an established art, with its rational principles, its exact and

[1] Claude Fleury, *Traité du choix et de la méthode des études*, chap. xx.

well-defined rules — an art that may be taught, and which, since 1880, has been required to be taught in our schools. It is evident, moreover, and we shall not insist upon it, that gymnastics should vary its exercises according as it is for boys or girls, as it is taught in city schools or in country schools. But its utility is universal, and the circular of March 9, 1869, already quoted, observes, with reason, that the awkward and clumsy attitude of a great number of the soldiers from rural districts is sufficient to show how great is the necessity of suppling their limbs, or rendering their walk freer, and of teaching them to use their natural forces to better advantage.

Gymnastics for Girls.—As observed by an author already quoted,[1] "Women have need of gymnastics even more than men; for, in their case, the obstacles which civilized life opposes to physical development are far more numerous, and even much more harmful." Doubtless men have special duties, which, at first thought, seem to render gymnastic exercises more necessary for them, since, for example, these exercises prepare them for the fatigues of military life. All men are to be soldiers. Yes; but girls are to be mothers! Mr. Spencer also, in the essay which we have already analyzed, eloquently insists on the equality of the two sexes as to their need of gymnastics. Moreover, the ideal woman is not a frail, delicate creature, with a dainty appetite, incapable of all physical effort. Mr. Spencer desires for her, on the contrary, a robust development and blooming health, "however plebeian these qualities may appear."

The Pedants of Gymnastics.— However thoroughly we may appreciate the merits of gymnastics in the education

[1] Barthélemy Saint-Hilaire, Preface just quoted, p. xiii.

of girls, as well as in that of boys, we shall guard against falling into the exaggerations and whims of those whom a contemporary author aptly calls the "pedants of gymnastics," and who see the salvation of the body only in the continual practice of intricate and complicated exercises.

"There is at present a tendency to consider the trapeze as the regenerator of the human race. It seems that the art of moving our members may be acquired only after long research and profound meditations. We fall under the ferule of the pedants of gymnastics; and doubtless the time will come when we shall be as much astonished at taking exercise while walking, as M. Jourdain was at speaking prose while talking. In the universities, and even in female seminaries, may be seen the most complicated machines, and the teaching of the most difficult, and, we might say, the most grotesque, movements. Through lack of attentive discrimination, people fail to understand that many of the amusements to which children abandon themselves, are really violent exercises, while many of the exercises of formal gymnastics are simply difficult tricks."[1]

School Amusements.—These are highly recommended by Mr. Spencer, who places the free and joyous effort of activity in play far above the artificial and somewhat monotonous exercise of the gymnasium, for the special reason that the regular and systematic exercise of the gymnasium is

[1] Dr. F. Lagrange, *Physiologie des exercises du corps*, Paris, 1888, p. 209. The commission organized by the decree of Oct. 18, 1887, to revise the programme relative to teaching gymnastics, has just published its work. In President Marey's report we read the following: "The defects of the present curriculum are striking, considering the fact that it is intended ordinarily for children of both sexes; it does not take sufficient account either of the age of the pupils or of the different conditions of country and city life; it too often makes a dry routine of instruction which might be made attractive; it is based on an empirical tradition rather than on the laws of physiology and hygiene."

not accompanied with pleasure, and is the less wholesome on this account. It is not altogether correct to say that gymnastics is not accompanied with pleasure; but it is certainly less so than play, and too often, when misused, it becomes, as has been said, simply an extra task.

Then, if we would have the rising generations to grow strong, physically and morally, let us wish for them active recreations in the open air free, but at the same time supervised and regulated.

Art, indeed, should intervene to teach the child to play, to furnish him with instruments,[1] and to prepare for him either spacious courts within the enclosure of the school, or play-ground out of doors, or as they have been called, "*des prairies de jeux.*'

Here is an exact statement of what is done in Switzerland, according to an eye-witness, M. Steeg:

"The plays are all very gay, and at the same time very orderly. Girls and boys play together; a college professor organizes the games and has the general direction of them. Here is a game of ball, there a game of "graces," where twenty little girls are throwing rings all at once; here a game of lawn-tennis; there a shooting-match with cross-bows, a very popular sport in the land of William Tell. There is running, jumping, and laughing. All this is done very seriously, and yet very joyously. Every day the different schools take their turn in coming to exercise in this way in the open air and in public."[2]

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[1] In a circular addressed by the rector of the Academy of Toulouse to the inspectors under his jurisdiction, we read the following: "Organized plays should count as lessons in gymnastics; children should be taught to make their ordinary recreations more active, and, hence, more hygienic. They should not be left free to amuse themselves during their recreations; hence they should be taught certain plays, base-ball, tennis, croquet, battledore, bowls, stilts, vaulting."

[2] *Revue pédagogique*, 1888, p. 217. So certain municipalities in Bel-

But it is not to be imagined that an organization of this kind is necessary to satisfy the child's need for exercise. In such matters, that which is the simplest is the best. If we have not at hand artificial machines and ready-made playthings, let us invent some. On this point we may resort either to the imagination of children or to the devotion of ingenious teachers. When we have not, as in Switzerland, a spacious play-ground, we may always find, in the vicinity of the school, a highway where it will be easy in a thousand ways to call into play the physical activity of the children.

School Promenades. — It is in boarding schools especially that it is necessary to find in walking exercises a corrective for the long hours of confinement to which the pupils are subjected. But even for the day scholars of primary schools, the walk, organized from time to time under the conduct of the teacher, may also have its utility.

The experiment has been tried, and not without success. In the circular addressed by the inspector of the Académie de la Loire-Inférieure to the instructors of his department, at the opening of the scholastic year 1887–88, we read the following:

"I desire that, at least once a month, all the scholars engage either in a pedagogical promenade with a definite purpose, (a geographical study, a visit to an historical monument or museum, studies in natural history or agriculture, a visit to a factory, etc.,) or a school walk, serving to strengthen and harden the children."

And the author of the circular, relying upon the numerous reports of teachers, testifies to the happy results of his experiment.

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gium and Germany, for lack of school grounds, have appropriated for their plays public parks and vacant lots.

Of course this exercise should not be imposed, should not be made obligatory and official. In the country particularly, where the children, in order to reach the school, have several miles to travel, the school walk would not always have its justification. But in city schools, leaving the teacher free to choose the season, the day, and the hour, it could not be too strongly recommended.

Vacation Colonies. — The purpose of physical education is not simply to preserve health that is naturally sound; it owes its attentions also to feeble constitutions; its duty is to remedy, as far as possible, the debility of frail and sickly children.

In this respect, one of the most ingenious institutions, and one of the most worthy of commendation, that has appeared in modern times, is "vacation colonies," whose origin is due to Switzerland, to a minister of Zurich, M. Bion.

Vacation colonies consist in sending for a few weeks far from the vitiated atmosphere of cities into the midst of the mountains or forests, or sometimes to the sea-shore, a certain number of poor school children, chosen from among the weakest and most anæmic. These institutions do for them what parents in rich families do for their children. Under the supervision and direction of a teacher, they go to fill their lungs with the invigorating air of the country. Vacation colonies, to be sure, do not work miracles; they do not undertake to remake impoverished constitutions in a few days. They contribute, nevertheless, to a marked improvement in the health of the little colonists; and "when they return to school," says M. Cottinet, "after having been well cared for, well nourished, well bathed, and well entertained, with glowing color, full chest, and the mind stored

with pure images and healthful ideas, these disinherited come to be envied by others."

Excessive Brain Labor.— But all gymnastic exercises would be to no purpose, all the ingenious inventions inspired by the solicitude of families or of society for the health of children would remain fruitless, if a badly conducted intellectual education, leading to exhaustion and to excess of mental labor, were to counteract the happy effects of gymnastics and bodily activity. It is not so much through lack of exercise as by the abuse of study that, in most cases, the health of children and of young people is impaired. In other terms, it is not sufficient that a few hours each day be reserved for rest, recreation, exercise, and play; it is necessary, in addition, that the studies be well regulated, proportioned to the limited powers of the child, and adapted to his age. A forced intellectual development, as Mr. Spencer observes in the last part of his Essay on Physical Education, produces either physical weakness, stunted growth, or premature death. And this is how intellectual education, of which we have now to speak, may, and should, if wisely directed, coöperate with physical education, and contribute its part to the regular development of the vital forces and to the preservation of health.

SUMMARY.

14. Hygiene does not simply permit measures of precaution and preservation: there is a positive hygiene, which makes exercise a law.

15. Physical exercises are necessary, first, because they permit the brain and the nerves to rest; second, because they directly strengthen the muscles, the immediate agents of movement and the instruments of all physical labor; be-

cause they quicken the whole organic life; and finally, because they affect even the mind, by reason of the relations which exist between the intellectual and the physical life.

16. Physical exercises develop the will, because the will intervenes in the effort of all prolonged muscular activity.

17. Among physical exercises, the best are those which do not require an excessive expenditure of muscular force, those which benefit all parts of the body, and which may therefore be called complete exercises; and lastly, those which require the least intervention of the cerebral faculties.

18. Gymnastics may be defined as the art of exercising the body. In the selection of the regular and systematic exercises which it organizes, it is inspired by the preceding rules. Its purpose is not to make gymnasts or professional athletes, but to provide for the general education of the body.

19. Gymnastics was held in honor among the Greeks and Romans; even in the Middle Age, during the time of chivalry, it was not without its champions. As early as the seventeenth century, pedagogy demanded that a "treatise on exercises" be written. This treatise has been written under various forms in our own time; and gymnastics is henceforth an established art, which may be and should be taught.

20. Gymnastics is no less necessary for girls than for boys: boys are to be soldiers, but girls are to be mothers.

21. We should not, however, make an abuse of systematic exercises and complicated difficulties, and should not trust ourselves exclusively to those who have been called the pedants of gymnastics.

22. To the systematic exercises of gymnastics should

be added school amusements and those active recreations in which, with greater liberty, the child abandons himself to all his frolics.

23. We can but recommend the use of school promenades, organized either for purposes of instruction or for accustoming the children to walk.

24. The institution of vacation colonies should be made general, in order to counteract the loss of vitality and general debility of the poor children who live the whole year in a vitiated atmosphere.

25. Unless, by a wise regulation of studies, all excessive brain work, all abuse of intellectual application, be avoided, the most careful physical education would amount to nothing.

B.—INTELLECTUAL EDUCATION.

CHAPTER III.

DEVELOPMENT OF THE FACULTIES AT DIFFERENT AGES. THEIR APPLICATION TO THE DIFFERENT BRANCHES OF KNOWLEDGE.

Intellectual Education.—Intellectual education has a two-fold purpose: to store the mind with the greatest possible amount of knowledge or truth; and, at the same time, to form the mind itself, to develop the faculties of the intelligence.

The range of the knowledge to be communicated is more or less extended, according as the instruction is of the primary, secondary, or higher grade. Things are taught in the college that are not taught in the school, and in the university what is not taught in the college. But the higher aim everywhere, in the humblest village school as well as in the highest course of the Sorbonne, is to form minds, to develop sound and robust intelligences in possession of their essential organs, not simply furnished with a certain amount of knowledge, but capable of growth and of exercising their powers in acquiring new knowledge; and capable especially of manifesting themselves in sound judgment and right reason.

If such is the ideal purpose of instruction in all grades, it may be said that it is in primary instruction we find it

most necessary to propose this end, and, at the same time, most difficult to attain it.

Difficulty and Necessity of Intellectual Education.—In the school, in fact, we have less time at our disposal than in the college. We have leisure to store the child's mind with but a small amount of elementary knowledge. We simply skim over the sciences, which, when studied thoroughly, by the very nature of their related ideas and logically connected reasonings, carry with them order, method, exactness, and reason. On the other hand, we can not think of making a thorough study of history, that school for the judgment, nor of advancing very far in the study of literature, in which we acquire delicacy and refinement of thought. In short, in a course of instruction which is necessarily limited and of short duration, we do not find for organizing the child's intelligence the resources which are offered in a full course of studies pursued for a series of years.

The difficulty, therefore, is great; so great that the old idea that there is, properly speaking, no intellectual education in the primary school, still prevails.

"It is an absolute necessity," says the author of a recent book, "that primary instruction be very elementary, and, condemned to be very elementary, it is an absolute impossibility that it have any educative value whatever."[1]

If these affirmations were as true as they are positive, it would be equivalent to closing the schools. But the summary judgment of M. Goumy is not sufficient to settle the question; and an appeal may be taken from it. However elementary primary instruction may be, it is evident that,

[1] Édouard Goumy, *La France du centenaire*, 1889, p. 274.

by a wise selection of studies, by a skillful direction of the instruction, and by the use of active and living methods, which, applied even to very elementary knowledge, appeal to the minds they are training, it is evident, we repeat, that, in this way, the primary school, in spite of its detractors, may have an educative value. Although the primary teacher has less means at his command than the teacher in the secondary school, we maintain that it is, nevertheless, his imperative duty to form clear-sighted, well-disciplined, and vigorous minds. That he can only half-way defend his pupils against the darkness of ignorance, that he is denied the ambition of giving them that intellectual equipment which always enables the highly cultured mind the more easily to attain its freedom, is the very reason why he should, by redoubled effort, and a more consummate art, seek to arm the intelligence of the common child against prejudice and the weakness of an untrained judgment.

Education and Instruction. — The principal means employed in intellectual education is instruction. There is, in fact, no other way to develop the faculties than by exercising them. Now, intellectual exercise is study, and teaching is causing a pupil to study.

To know well what he teaches is evidently the first qualification of the teacher. But this is not sufficient: he needs furthermore to know how to use what he knows so skillfully as to make of it an instrument of intellectual culture. To this end, he needs at least two things, over and above his natural qualifications: (1) to have studied the nature of the child until he understands the progressive development of the faculties, at different ages, sufficiently to adapt his instruction to the capacity of the minds of his pupils; (2) to have reflected on the nature of the different orders of

knowledge, and the methods adapted to the study of each science, so as to make appeal to this or that faculty as the case may require.

In other terms, the teacher should know, as philosophers say, both the *subject* and the *object* of the instruction. By the subject, we mean the child who studies, and to the natural growth of whose mind the order and progress of studies must be adapted. By object, we mean the different branches of knowledge which compose the curriculum of studies, and which, to be learned, demand the application, at one time, of the faculties of memory and imagination; at others, those of judgment and reason.

It is by not having conformed to one or the other of these two conditions, that inexperienced teachers sometimes fail in the intellectual education of their pupils. They overwork and abuse the intelligence of the child, by imposing upon it efforts out of proportion to its strength, by burdening it too soon with abstractions and general formulas, or they unskillfully employ faculties which are not adapted to the work to which they apply them, as, for example, in calling memory alone into service in the study of arithmetic, or, inversely, pure reason, in the study of physics.

Psychology of the Child.—In a word, what we teach is of less importance than our manner of teaching; so that the meager amount of knowledge imparted may be compensated for, in part, by the methods employed in imparting it.

Let us not imagine that the sciences, or that knowledge of any kind whatever, may pass from the book which contains it to the mind which is to assimilate it, without preparation or precaution, without the teacher's seeking to know under what form the instruction should be given, by what

favorable avenue the intelligence of the child is open to his lessons, and what approaches, on the other hand, are still closed in a mind that develops slowly day by day.

Hence the importance of the reflections on infant psychology, to which we invite the attention of all teachers.

A point of prime importance, which can not be contested, is that the mental faculties are subject to the law of development, or progressive evolution. Nothing in nature is made at once, by a single stroke, by a sort of improvised miracle. The mind, like organized bodies, as plants, for example, is formed little by little, by insensible degrees. Hence this pedagogical conclusion: in the development of the intelligence, all times are not equally favorable for beginning this or that study. It is necessary that the teacher's art introduce into the course of instruction an evolution or progression analogous to that which nature herself realizes in the intellectual faculties.

Innate Faculty.— Another essential truth is, that the mind is not merely the result of successive acquisitions of experience, and is not made up merely of the knowledge which we store away from day to day.[1] It does not start from nothing to achieve everything. It possesses at birth innate tendencies and aptitudes. It is not, as certain educators, notably Comenius and Diesterweg, seem to think, an empty capacity, or *tabula rasa.*

"Even before birth, there are inscribed on this tablet, in many obscure characters, traces of inscriptions made by the repeated impressions for innumerable generations. So effaced and indistinct are these inscriptions, that the tablet has been regarded as clean. But the more we observe the child, the better we succeed in easily deciphering the once illegible inscriptions which he

[1] See Compayré's *Elements of Psychology*, pp. 76, 196, 197.

brings with him into the world. We then recognize what capital he has inherited from his ancestors, how many phenomena his mind displays which are independent of sensitive impressions, and how erroneous it is to think that man learns to think, to feel, and to will by himself, simply by the mere activity of his senses."[1]

From this it follows that the teacher, to succeed in his work, should take care to discriminate these general tendencies of nature,—for example, curiosity, desire for pleasure, sympathy, and self-esteem. He can contribute to the formation of the mind only in so far as he knows how to conform to natural laws; just as the hygienist can assure the health of the body only by adapting his prescriptions to the laws of the living organism.

Difference of Aptitudes.—But the effect of the innate is not merely to furnish all intelligences with a common fund of inclinations which are found in all children. It diversifies minds; it varies its gifts; it endows some with more memory, others, with more imagination; it distributes the substantial qualities of judgment and reason capriciously and in very different proportions. In vain does psychology use every effort to emprison the mobile and variable nature of things in exact and fixed formulas; it does not succeed. There are always individual differences. When psychology has taught you what the child in general is, what human nature is, it still remains for you to learn by your own experience, what, in their distinct individuality, are the children whom you have to educate.

The divination of character, so important in moral education, is no less so in intellectual education. Some children need to be watched continually, constantly held in check; they will make no progress unless you have

[1] Preyer, *L'Ame de l'enfant*, Preface, p. xi, Paris, 1887.

your eye always on them, explain the slightest things to them, and, to use this trivial expression, chew all their food for them. Others, on the contrary, should be allowed to walk entirely alone; they should have free rein. You would impede them, if, through an indiscreet zeal, you should endeavor to direct all their movements. Sometimes there is extreme emulation, and at others almost none. Taste for reading, very strongly developed in some, scarcely exists in others. In short, there are no two children who are alike. It is indispensably necessary to be able to recognize these differences, sometimes slight, sometimes well marked, in order to strengthen the favorable aptitudes and make them serve your end, or to repress and restrain them, if, by their natural exaggeration, they threaten the general harmony of mental development.

Identity in the Order of Succession. — The diversity of aptitudes which obliges the teacher to vary and to graduate his means of education with great ingenuity, in order to meet the wants of each child, does not, however, prevent the organization of a course of study identical for all.

Because, as correctly observed by a writer on infant psychology, individual differences depend much more on the time and the degree than on the order of succession and appearance of intellectual phenomena. These phenomena are essentially identical in all cases.[1]

In other terms, the faculties are not developed in all children of the same age at the same hour; they have not the same degree of power; but they appear one after another in the same order of succession. There may exist sensible differences in the size of fruit, the color of flowers, and the

[1] Preyer, *op. cit.* Preface, p. vii.

dimensions of leaves; but, as a general rule, leaves precede flowers and fruit.

The consequence is that we may, without fear of mistake, offer to all children the same course and gradation of studies, on the condition, however, that we retard or hasten this forward movement, according as we have to do with sluggish, backward, slowly developing natures, or with precocious intelligences, in which some inward power hastens and precipitates the intellectual evolution.

The Gradation of Studies. — In the selection and distribution of studies, then, we will seriously consider the natural sequence of the faculties. The logical order of a good course of instruction should correspond to the chronological order of the development of the mental powers. Just as the stomach of the infant bears no food but milk, and as it would be dangerous to give it solid food until it has teeth to chew it, so the mind of the child admits at first of no other intellectual food than concrete knowledge. It has not the power to digest and assimilate abstract truths and general ideas. Only chimerical idealists, like Malebranche, could imagine that the intelligence is not characterized by age, and that the little child has as much reason as the mature man. As has been clearly established by modern educators, and notably by Mr. Spencer, success in studies is possible only when the instruction begins with the simple and concrete and proceeds to the complex and abstract.

"There is a given order in which, and a given rate at which, the faculties unfold. If the course of education conforms itself to that order and rate, well. If not — if the higher faculties are early taxed by presenting an order of knowledge more complex and abstract than can be readily assimilated; or if, by excess of

culture, the intellect in general is developed to a degree beyond that which is natural to the age—the abnormal result so produced will inevitably be accompanied by equivalent, or more than equivalent, evil."[1]

Knowledge, presented out of season to an ill-prepared intelligence, either yields it no profit, but glides over the surface of the mind which is unprepared, just as seed is lost on an untilled field; or, on the other hand, though more rarely, this precocity of forced studies provokes an artificial excitation which fatigues and exhausts the intelligence in its prime and makes it sterile forever. Infant prodigies rarely become distinguished men, unless their extraordinary growth be the result, not of an excessive and abnormal culture, but of extraordinary natural endowments.

Curiosity.—The fundamental principle, then, of a sound intellectual education, is to regulate the order of studies and the choice of methods according to the natural laws of the mind's spontaneous activity. To this end, the teacher should constantly appeal to the instincts of the child, "those inclinations of nature which, as it were, anticipate instruction,—and especially curiosity."

Curiosity is one of the chief springs of the intelligence, but it is a delicate spring which is easily broken if not prudently and skillfully handled. Curiosity, generally very active in a young child, is often blunted, and sometimes disappears in the scholar because we do not know how to sustain and exercise it.

"The manner in which a child is instructed," says a shrewd observer, "often has the disadvantage of forestalling curiosity, of preventing its rise, or, at least, of promptly arresting its move-

[1] Spencer's *Education*, p. 268.

ments. In fact, what do we do? We take a child, seat him on a bench, and teach him a multitude of things of which he has never observed the existence, which he did not anticipate, and which, consequently, he could not desire to know. We destroy his curiosity before it has had a chance to be aroused. As to the things of which he has been able to catch some glimpses, and which, perhaps, have puzzled him, we bring these before him completely and all at once, and even with greater detail than he requires. We overtax his curiosity almost before it is born. We teach him so many things by compulsion, which he no longer has the least desire to know."

There is, then, a special art in keeping curiosity aroused, and he uses this powerful means of education to best advantage who does not abuse didactic instruction, but interests the child in seeking and discovering truth for himself.

Self-Love.—All children are endowed with curiosity. All are, also, more or less sensible to self-love. Whatever may be the possible abuses of emulation, we do not think that intellectual education can do without this stimulus. Doubtless the child desires to know; but, in addition, he desires to know what his companions do not know, or, at least, to know it better than they; and it is the teacher's duty, while moderating them, to take advantage of these little ambitions for study.

Just as in morals it would be unwise not to grant well regulated interest as an auxiliary to duty, so in pedagogy it would be dangerous not to add the stimulus of self-love, however egoistic it may be, to the disinterested love of learning.

Intrinsic Charm.—It would be utterly to disregard the laws of human nature, and to forget the unity of the moral

organism, to suppose that the faculties of the intelligence alone should coöperate in the work of intellectual education, and that it is not necessary to blend the sensibility, under all its forms, with the occupations of the mind.

In this respect we have given up the prejudices which prevailed during the period of asceticism, when Pascal was led to renounce the study of geometry as a sin, because it was agreeable to him. Without going so far as to say, on the contrary, that a study is good, that it can benefit the mind, only on condition of its being agreeable or giving pleasure, it is certain that we should, as far as possible, eliminate from instruction its asperities and useless rigors, and render it in some measure attractive.

And this attraction will result, not so much from foreign embellishments and vain attempts at agreeable artifices, as from an exact adaptation of the study to the age of the child, and from our own efforts to select and present the subjects of instruction in the order and manner which will be most interesting to the pupil. It is a psychological law, indeed, that all activity is agreeable which responds to the forces of human nature and is in harmony with its laws.

Necessity of Effort. — But however much disposed we may be to recognize the advantages of attractive study, we shall not say with Fénelon: "Pleasure must do everything." In his exceedingly complacent system, the author of *The Education of Girls* repudiates whatever is painful. He wishes in all things to substitute pleasure for effort. He does not dare to present to the child knowledge wholly unadorned and dry, for fear of repelling his attention; he must always adorn it with artificial attractions. He absolutely proscribes didactic instruction. In the pursuit of

knowledge he follows none but pleasant paths, and in training the mind uses only agreeable processes.

Seductive but dangerous utopias, which disdain the persevering and sometimes painful efforts exacted by intellectual education! Doubtless it is well and even necessary not to discourage and disconcert the child's mind, especially in the beginning, by instruction that is too grave or too austere. But through a desire to render studies attractive, we diminish their power, render them puerile, and compromise their wholesome and strengthening effect. Through the desire to extenuate the weakness of the child, we take the most direct means to perpetuate this weakness. The true way to make the child strong intellectually and morally is to believe in his natural power, to give him credit for even more power than he really has, and in all cases to call into exercise what he has, without sparing him either the pain or the fatigue coming from its use.

Intellectual education is not merely the result of the natural and normal development of the intellectual faculties proper, aided and guided by the skill of a teacher. We have seen already that sensibility plays a part in the work, and what we have just said of the necessity of effort proves that intellectual education is also in part a work of the will. We should lose our time and labor, should have organized in vain the best methods of instruction, and in vain should have sought auxiliaries in curiosity, self-love, and sensibility, if we did not know how to awaken in our pupils a strong determination for self-instruction.

Application of the Faculties to the Different Orders of Knowledge.—We see, then, how the different faculties of the soul are brought into play in intellectual education. It is none

the less true that the teacher should give his special attention to the particular powers of the intelligence. He should know how to excite all of them, should guard against favoring one to the exclusion of others. Education is not a series of special cultures, but is an harmonious development. The field of studies for the primary school, although restricted, is sufficiently large to give play to the several mental aptitudes of the child. There are some studies which demand special exercise of the memory, others of the reason, and still others of the imagination. By a clear insight into the nature of the work to be done, the educator should know just what instruments, what intellectual tools he should use in any given case. Just as he should forget no one of the little band of children which he is leading, and as he is not allowed to leave any one of his pupils inactive and neglected at his seat, so in this aggregate of faculties which constitute the mind, there is not one which he should not in its proper time bring under discipline by inciting it to the exercise adapted to it.

The important thing in intellectual education is not so much to impart a vast amount of knowledge as to create a taste for self-instruction, and to form the faculty for acquiring and elaborating. We may say of all the intellectual powers what Diesterweg said of attention: "Attention is a precious faculty: the mind may forget what it has learned, but the faculty of being attentive, once acquired, is never lost."

SUMMARY.

26. Intellectual education has a double purpose: to furnish the mind and to form it.

27. The primary school evidently has not at its disposal so many means for the development of the intellectual

faculties as have the schools for secondary and higher instruction; yet, limited as is its instruction, its work may and should have an educative value.

28. The essential thing is not so much what we teach as how we teach it.

29. To teach successfully, we must, first of all, know thoroughly what we teach, but we must also know: (1) how to conform to the progressive order of the development of the intellectual faculties; (2) how to take into account the nature of the different branches which compose the curriculum of studies, so as to apply, in the pursuit of each study, the faculties which are adapted to it.

30. The intellectual faculties, like all natural forces, are subject to the laws of development, of progressive evolution.

31. The mind is not a *tabula rasa* at birth; it possesses innate aptitudes and tendencies. The teacher should be able to discern both the general inclinations which constitute the common basis of human nature, and the special aptitudes which distinguish the individuals.

32. Individual differences depend more upon the *time* at which intellectual phenomena appear and on the degree of their power, than on the order of their sequence.

33. There is in the development of the faculties a constant sequence, to which should correspond the gradation of studies and the choice of methods. The logical order for the course of instruction corresponds to the chronological order of the evolution of the faculties.

34. The teacher should know how to appeal to the instincts of the child, those natural tendencies, which, it has been said, anticipate instruction, namely, curiosity and self-love.

35. The intellectual faculties are not alone concerned in intellectual education: it is necessary to put also under

contribution the sensibilities, the natural demand for pleasure, and, consequently, to render instruction agreeable and attractive.

36. Intellectual education is, in part, a work of the will; it would be dangerous always to substitute attraction for effort. The child's powers must be exercised, sparing him neither pain nor fatigue.

37. All the intellectual faculties should, in turn, be exercised and applied, each in its own time, to the different subjects of study, according as they demand more of memory and imagination, or of judgment and reason.

CHAPTER IV.

INTELLECTUAL EDUCATION.—EDUCATION OF THE SENSES. EXERCISES IN OBSERVATION.

The Senses and Intellectual Education.—In a well formed mind, whose intellectual education is complete, each faculty should have been exercised and developed so as to contribute its part to the common work, which is the ability to think well; just as in a family, or in a well ordered state, each individual works in his sphere, contributing according to his ability to the collective prosperity of the family or nation. The ideal, then, for this solidarity of function, which, by a single word, we call intelligence, is a special adaptation or special culture of each faculty in question through the knowledge which it has acquired or is capable of acquiring, and thereby capable of being associated in the harmonious action of the whole.

Consequently, active and alert senses which furnish us with accurate and definite perceptions; a clear and reflective consciousness; a prompt and faithful memory which preserves all the acquisitions of experience; a vivid imagination; an accurate judgment and a sound reason, correctly founded on well conceived general notions; such, in short, is a list of the intellectual qualities which the teacher should assure to his pupil, in order to obtain a happy equilibrium of all the faculties.

Education of the Senses.—The senses play too great a part in the organization of the intelligence for us to allow

them to be neglected, as was done by the old education. Formerly the child's eyes were scarcely exercised at all, save as they were fixed on a book, or on the letters of the alphabet. To-day we tax our ingenuity to present to them all sorts of sensible objects, or, in default of objects, pictures.

The education of the senses, which, in fact, begins at the cradle with the first look the child casts upon the world, should be the object of the attentive solicitude of parents; but this process is continued at school. Moreover, it comprises several parts, the senses themselves being complex organs, the material instruments of intellectual perception.

1. The first essential is to assure the natural health and integrity of the organs, and to preserve them from the infirmities which interfere with their normal function.

2. Then each sense should be so perfected by appropriate exercise, that in its own sphere it may acquire the greatest possible power and precision.

3. While we are developing the senses themselves, we should also develop those active faculties which coöperate in their exercise, as attention, or the habit of observation.

4. And lastly, the senses being the material conditions of all ideas, and of all feeling of the beautiful, it is not useless by the choice of the perceptions which we suggest to the child to pave the way for his æsthetic education, that is, to accustom him to enjoy the beauties of nature and art.

Hygiene of the Senses.—The starting point in the education of the senses is found in physiology and hygiene. The senses, being extremely delicate organs, are sometimes imperfect in their natural structure; and through lack of

care they contract other imperfections. To speak only of the eye, the most important of all the senses, myopia is the unmistakable evidence of this effect of a bad education.

In fact, myopia is often the consequence of the conditions of school work. The proof of this is the fact that the number of pupils affected with it sensibly increases from grade to grade. Of one hundred and six pupils examined in the first year of the primary department, not one was near-sighted; of sixty-six pupils in the high-school department of the same school, eleven were near-sighted.

Specialists agree in attributing this alarming increase to a prolonged unwholesome posture. Pupils hold their eyes too near their books and tablets; and this is because the lighting is defective, the school furniture badly arranged, the books too finely printed, or because the methods of writing are bad. The cause of the evil being known, it is easy to find the remedy. Hygienists state that, as a rule, "the distance of the eyes from the book should never be less than 25 centimetres in the kindergarten, and 33 centimetres in the primary school."[1] Moreover, they give a multitude of minute regulations, which we shall simply summarize.

LIGHTING OF ROOMS.—The problem of lighting a classroom is solved when there is sufficient light in the darkest place. Bilateral lighting is better than unilateral lighting. In kindergartens especially, lighting by sky-light is best.

FURNITURE.—The distance apart should be such that a line dropped from the top of the desk would touch the front of the seat; the desk should not be too high; the pupil should be able while writing to support himself against the back of his seat; his feet should rest on the floor; and lastly, the top of the desk should be slightly inclined.

[1] See *Hygiène des Écoles Primaires*, Rapports et Documents.

Still other conditions are required, the details of which would lead us too far out of our way. These relate to the position of children while writing, and to text-books, whose type should not be too small, and which should be printed on white, or better, yellow-tinted paper.

Doubtless, these rules could not always be observed, but it is well to indicate them, in order to encourage instructors to conform to them as far as possible. For who would willingly permit his school to become a manufactory of near-sighted children?

The Perceptions are Perfectible.—It would be to no purpose for nature or hygiene to have given us excellent instruments of sense-perception, unless we had learned to make use of them. Like all the faculties, the senses are perfectible. There is a considerable margin between what they are naturally and what they are capable of becoming by means of a systematic and regular education. As Rousseau has said, "we can neither touch, see, nor hear, save as we have been taught." Take the most intelligent child, naturally endowed with good sight; it remains still to teach him how to see, how to consider an object under all its phases; it remains to give him the habit of precise, complete, exact perceptions, which are not satisfied with a rapid glance or a superficial consideration of things, but which patiently analyze all the details and all the particulars of the objects perceived.

The Senses as Instruments of the Mind.—What should particularly interest us in the education of the senses is that it is not simply a matter of putting them in condition to provide with certainty and promptness for the wants of the material life. While we are exercising them for them-

selves, as for example, when we teach the eye to measure distance, or to explore at a single glance all the aspects of a given object, we are storing up material for the mind. Sense-knowledge is not only the most abundant, but it is also the first that the intelligence can acquire, and that which should serve as the basis of all other knowledge. In 1762, before the time of Pestalozzi and Froebel, La Chalotais wrote that "the fundamental principle of all method is to begin with what is sensible, so as to pass gradually to what is intellectual"; and at the same date, Rousseau developed the same thought in the *Émile*. Before either of them, Comenius had said that the principle of education was that one should "see and name."

Teaching through the Eyes.—It may be said that the greatest innovation of modern pedagogy consists precisely in this tendency, more and more manifest, to substitute for abstractions, general rules, and lessons learned by heart, sense-intuitions, or concrete perceptions. And if we will consider the matter closely, this pedagogical revolution has taken place to the special advantage of a single sense, that of sight. The characteristic of modern methods of intellectual education is, that they are, so to speak, a substitution of the eye for the ear. Horace Mann expresses it clearly in the following passage:

"After the earliest years of childhood, the superiority of the eye over the other senses, in quickness, in precision, in vastness of its field of operations and in its power of penetrating, like a flash, interstices where light can go and come, is almost infinite. The senses of taste, and smell, and touch seem to be more the servants of the body than the soul; and, amongst the infinite variety of objects in the external world, hearing takes notice of sounds only. . . . . But the eye is the great thoroughfare between

the outward and material infinite and the inward and spiritual infinite. The mind often acquires, by a glance of the eye, what volumes of books and months of study could not reveal so livingly through the ear. . . . . To use the ear instead of the eye, in any case when the latter is available, is as preposterous as it would be for our migratory birds, in their overland passage, to walk rather than to fly."[1]

Exercises in Intuition. — In intellectual education, then, exercises in intuition ought to take more and more the place formerly given to the mechanical exercises of memory. This necessity gave rise to the system of *object lessons*. Instead of words transmitted through the ear to the memory, things themselves are presented to the mind through the eyes.

As Mr. Spencer puts it:

"The saying of Bacon, 'that physics is the mother of the sciences,' has come to have a meaning in education. Without an accurate acquaintance with the visible and tangible properties of things, our conceptions must be erroneous, our inferences fallacious, and our operations unsuccessful. The education of the senses neglected, all after education partakes of a drowsiness, a haziness, an insufficiency which it is impossible to cure."[2]

Object Lessons. — Object lessons do not profess to take the place exclusively of sense-intuitions, intuitions which the teacher may find a thousand occasions for exciting in the different parts of his instruction; nor of the spontaneous observations which the child is called to make at every instant in his walks and his recreations, any more than gymnastics professes to take the place of free sports and instinctive activity, in the education of the body. But

[1] Horace Mann, *Lectures on Education*.

[2] Spencer's *Education*, p. 62.

there is a gain nevertheless in having object lessons as a distinct exercise, especially in the beginning of studies. Children, with their native curiosity, are easily prompted to look and to observe for themselves; but their observation is weak, it is fickle, it lacks patience and perseverance. Hence the utility of *object lessons*, which, in reality, are but examples, given by the teacher, of the manner in which an object must be observed if we would take account of all its sensible qualities. The object lesson regulates, so to speak, sense-intuition; it gives method to the exercise of the senses. It is of less value for the particular knowledge which it imparts concerning the object which serves as a text for the lesson, than for the general habits which it tends to form. When the child, under the direction of the teacher, shall have several times analyzed a given object, as a plant or a mineral, under all its phases, he will have corrected the natural mobility of his intuition; he will have acquired a disposition to proceed in the same manner, that is, with order and method, in the course of all his studies as well as in his personal observations.

The True Method to Follow. — It goes without saying that the object lesson, which is an appeal to the senses and to the activity of the mind, to be effective, should not be transformed into a prolonged, mechanical, and consequently irksome, exercise. Pestalozzi made this mistake when he had his pupils repeat for hours what they observed in the mysterious wall-paper, whose rents they laboriously described . . . .

As Buisson very judiciously observes in the *Dictionnaire de pédagogie* (article *Intuition*): "When we have had children study a ruler, a cube, a table, a door, or a stove, for two or three lessons in succession, under pretext of impressing

upon them by successive exercises the intuition of the several physical or geometrical qualities of this object, we no longer obtain from them anything but words; they will repeat in chorus, if desired: 'The table is rectangular,' or 'the ruler has six faces and eight corners;' but they will turn their heads, think of something else, and will no longer care to see either these faces or corners. It is sufficient for them to have made these observations once or twice; all the repetitions which follow can be but mechanical."

The object lesson can be useful only on condition that it be interesting and attractive, consequently that it be judicious and moderate, and that it do not renew, under another form, the faults of ancient methods.

We can not repeat too often, that the purpose of the object lesson, in presenting to the senses of the child material objects, systematically chosen and carefully graduated, is not so much to have him perceive methodically the several qualities of these objects, as to give him the habit of adopting this method of analysis and complete observation in all his perceptions. The purpose is to teach him to discriminate with accuracy colors and shades of color, and to judge of length or distance. The purpose is to develop what the great painter, Leonardo da Vinci, calls "accurate judgment by the eye," or as another illustrious artist, Michael Angelo, has said, "to put the compass in the eyes."

The purpose is to prepare for the whole course of life an exact and penetrating power of perception, which may serve as a mental photography of material reality, which may permit the mind to accumulate a series of clear and exact images, and which, in a word, may make the senses the instruments of a kind of instinctive and natural geometry.

Drawing.—It is not only in formal object lessons, but also in the most of what is taught in school: in writing, drawing, elements of the physical and natural sciences, geography and manual exercises, that the teacher will be concerned in the education of the senses.

Rousseau had already pointed out the importance of drawing, as an instrument for the education of the eye:

"Children, who are great imitators, all try their hand at drawing. I would have my pupil cultivate this art, not exactly for the art itself, but for rendering the eye accurate and the hand flexible; and, in general, it is of very little consequence that he understand such or such an exercise, provided he acquire the perspicacity of sense, and the correct habit of body, which are gained from the exercise. I shall take great care, therefore, not to give him a drawing-master who will give him only imitations to imitate, and will make him draw only from drawings. He shall have no master but nature, and no models but objects. He shall have before his eyes the very original, and not the paper which represents it; he shall draw a house from a house, a tree from a tree, a man from a man, so as to become accustomed to observe bodies and their appearances correctly, and not to take false and conventional imitations for real imitations I shall discourage him even from tracing anything from memory in the absence of objects, until, by frequent observations, their exact figures are firmly impressed on his imagination; for fear that, substituting odd and fantastic forms for the truth of things, he lose the knowledge of proportions and the taste for the beauties of nature. I am well aware that in this way he will scrawl for a long time without making anything that is recognizable; that he will be late in catching the elegance of contours, and the light touch of designers, and perhaps never a discernment of picturesque effects and good taste in drawing; but, by way of compensation, he will certainly contract a juster glance of the eye, a steadier hand, a knowledge of the true relations of volume and form existing in

animals, plants, and natural bodies, and the more ready use of the play of perspective."[1]

Drawing is, beyond question, the best gymnastics for the sense of sight. In the *Instruction spéciale sur l'enseignement du Dessin*, published under the direction of the minister of public instruction, it is justly maintained that to learn to draw is at the same time to learn to see and to note what is seen. Consequently, it is required that in the kindergarten, and even in the primary school, instruction be given in drawing in connection with the object lesson; in fact, the description of an object could not be better given than by a representation, by a drawing. To have the child describe verbally an object which you may present to him is well; but to put a pencil into his hand and exercise him in reproducing it on paper or on a slate, is still better.

Manual Exercises.—There is scarcely an exercise of the school that may not be adapted to the education of the senses; but without dwelling on all the subjects of instruction, we shall emphasize briefly, from this point of view, the importance of manual exercises.

As Monsieur Schmitt expresses it in his *Pédagogie du Travail Manuel*,[2] the effect of the exercises of the school workshop is not merely to develop the dexterity of the organ of touch, the hand, which Gratiolet called "the five-pronged compass," but also to perfect the eye, to train it in estimating magnitudes.

"Let us suppose a child occupied in reproducing a box 30 centimetres long, 10 centimetres broad and 4 centimetres high. He will have the dimensions constantly before his eyes; will compare them with one another; they will be photographed in his

[1] Rousseau, *Émile*, book II.

[2] *Pédagogie du Travail Manuel*, by E. Schmitt, Paris, 1889, p. 70.

mind, and it can not be doubted that after this continued and reflective observation, he will be able to mark off from memory and without hesitation, the lengths 30, 10 and 4 centimetres with remarkable exactness, and by comparison, the double length, the half and the quarter. The same will be true in the case of surfaces and volumes."

Culture of the Attention.—The benefit derived from the education of the senses is not confined to the senses themselves: this education benefits the mind by furnishing it with innumerable ideas, and again by exercising those intellectual functions which are necessarily involved in the exercise of the senses, notably attention.

Train the child to examine sensible objects with care, to study the structure of the flower or the organism of an insect in all its details; not only do you teach him to see accurately, but you will have given him besides the habit of attention. And this power to concentrate his mind and to apply it to whatever he wishes, when once developed for the sake of material things, will always remain, and will come to be applied progressively to things in general.

Nothing is so delicate or so fragile as the attention in its first manifestations. If you employ unskillful methods, if, for example, you seek by force to hold the child's mind on books which do not interest him, or on abstractions which he hardly comprehends, you run the risk of rendering him inattentive for life; you provoke him to seek in distraction a refuge or defence against the ennui caused by studies illy adapted to his age.

There is then no other way, no surer or easier method of provoking the nascent attention of the child than by presenting to him sensible objects. In studying them he finds a pleasure which he could not derive in the same degree from the most skillfully conducted lessons, or from stories

the most happily related. And attraction or interest, as some one has said, "is an unique talisman for developing the attention."

The Habit of Observation.—Attention directed to external things takes a particular name; it is called observation. And there is an inestimable advantage in the child's becoming, not merely attentive in everything, but also observant; that is, attentive to whatever may be the object of sense. Mr. Spencer does not hesitate to declare that "success in all things depends on the power of observation." What is certain is, that the observation which is at the basis of the physical sciences is also the starting point in practical experience, the condition of success in business. How many errors would we not avoid in our social relations, for example, if we knew better how to observe other men, if we had learned by a penetrating and clear-sighted observation to divine their intentions and to know their characters, which are often betrayed in their gestures, and in facial expressions!

Nature, without doubt, endows every child with an instinctive inclination to observe. But what a difference there is between children in this respect! One will not have spent two minutes in a store-room or an apartment before being capable of describing everything it contains, and with the searching eye of an appraiser he will have seized the most minute details. Another, on the contrary, will have looked a long time, with seeing nothing, or almost nothing. There is reason, then, for being preoccupied, in education, with this inequality of aptitudes, and for favoring the development of the spirit of observation, by making frequent appeals to this faculty, and by obliging the child to render an account, either orally or in writing, of what he has seen.

Hearing and Singing. — The intuitions or observations of sight are certainly not everything in the education of the senses. Touch and hearing also merit the attention of the teacher. Hearing especially needs to be exercised at an early age. To hear well is a precious endowment. To be able to listen is still more important. In short, to have an ear is a desirable thing. The senses, such as hearing and seeing, are not merely the intermedia between the mind and the material qualities of the external world. When cultivated from this point of view, they also reveal the sensible beauties of things. Singing is to the ear what drawing is to the eye — a kind of appropriate gymnastics which develops the musical qualities, and leads to the appreciation of the purity of sounds; just as drawing teaches one to know and appreciate the accuracy and symmetry of lines and the beauty of forms.

The Æsthetic Feelings. — It is thus that the education of the senses lifts the mind of the child above things purely material, and elevates it gradually toward the enjoyments of art. The contemplation of the physical world, provided it be well directed, may be the awakening of the highest emotions. When a child is led to observe the tints of the rainbow, the changing colors of the dewdrop, or the majestic splendor of the setting sun, he is filled with love and admiration for these sights; he comes to comprehend the beautiful, to have a taste for it, and to seek it in order to enjoy it, both in nature and in art.

SUMMARY.

38. Intellectual education supposes the special culture of each faculty necessarily involved, in order that it may concur in the harmonious action of the whole.

39. The education of the senses is complex: 1, we should insure the material integrity of the organs; 2, the perceptions proper of each sense should be perfected; 3, the exercise of the senses should be utilized in developing the faculties which are actively involved in it, namely, attention and the habit of observation: 4, sense-perceptions should be used as the means of awakening the idea and the feeling of the beautiful.

40. The education of the senses depends first on hygiene, which maintains the organs in their normal condition, and, for example, protects the child against *myopia*, which is often the result of a prolonged, injurious posture.

41. The sense perceptions are perfectible; we learn to see, to touch, and to hear.

42. To educate the senses, they must be exercised; and while exercising them, we are not only rendering them more apt to perceive with precision, but are enriching the mind with a multitude of ideas which are the elements for the further development of the intelligence.

43. One of the principles of modern pedagogy is that we should gradually rise from the sensible to the intellectual.

44. In this pedagogic evolution which substitutes things for words, it is the sense of sight that is especially concerned, it is a question of instruction through the eyes.

45. The object lesson is a systematic exercise in perception or intuition; its merit lies not so much in its imparting any particular knowledge concerning certain objects, as in its forming the habit of observing everything methodically, patiently and thoroughly.

46. Most of the studies of the school offer facilities for the education of the senses, but drawing and manual exercises are of special value.

47. The exercise of the senses benefits the mind also

by offering an occasion for the development of the attention and of observation, which is simply attention directed to external things.

48. We run great risk of arresting the growth of attention, if at first we should forcibly employ it on abstractions; the best way to provoke it is to appeal to it through sensible things, which have a natural attraction for the child.

49. The senses not only reveal the scientific properties of external objects, they also enable us to apprehend the æsthetic qualities of things, and prepare for the subsequent education of the taste for the beautiful.

CHAPTER V.

OFFICE AND CULTURE OF MEMORY AND IMAGINATION.

Simultaneous Culture of the Different Faculties.—If it is necessary to give an important place to the education of the senses, it is not a reason, as Rousseau wrongly asserted, for devoting the first years of childhood exclusively to exercises in intuition. Exercises in memory and judgment should, from a very early age, be combined with the exercises in intuition. What value would attach to the sense-perceptions themselves if they were not controlled by the judgment and retained by the memory?

Moreover, books and oral lessons soon claim their part in instruction, and then all the faculties of the mind find occasion for being exercised, memory and imagination holding first rank.

In learning to read, for example, the child has first to use his eyes; a quick and accurate intuition of the letters of the alphabet will hasten the success of his efforts. But complete and rapid success is possible only as this intuition is followed by a clear representation in the imagination, and a faithful and firm retention in the memory.

In an illustrated reading lesson it is not perception, memory and imagination alone that are called into play; but judgment and reason also are active, however little we may wish the pupil to comprehend the sense and connection of thought contained in the text.

In other terms, the intellectual faculties have in vain

been distinguished from one another by psychological analysis; in fact, they are blended together; and the duty of the teacher is to call all of them into exercise, not one after another successively by a fragmentary culture, but all together and in one common effort.

General Rules.—Francis Naville, a Swiss educator, has clearly summarized the general rules or principles which may be safely followed.[1]

"1. The first principle is that all the faculties should be cultivated."

In other terms, all the faculties have a claim to education; all are capable of improvement, and all should be cultivated. How neglect any one of them, if the purpose be to form a complete mind, in which no important factor should be wanting?

"2. In the culture of the faculties we must regard the natural dispositions of the child, its sex, its vocation, and the relative importance of the faculties."

The faculties do not manifest the same degree of natural energy in all children; hence the necessity for the teacher to vary his methods of instruction and his style of questioning, in order to adapt them to the individual aptitudes of his pupils, tempering the too active imagination of one, and exciting the sluggish imagination of the other. Moreover, the faculties are not all of the same importance; hence the necessity of proportioning exactly to the part which they have to play, the scope which, by particular culture, we prepare for each of them; memory, for example, will be subordinated to judgment.

[1] See *l'Education publique considirée dans ses rapports avec le développement des facultés, Paris, 1833.*

"3. All the faculties should be educated simultaneously.

"4. Each faculty should be applied exclusively to the objects of its sphere."

Although all the faculties do not unfold with the same rapidity, though some precede others in a natural order of evolution, yet all should, as far as possible, be put under discipline. On the other hand, each faculty ought to be kept in its distinctive sphere: memory, for example, has almost nothing to do with the rational sciences, as arithmetic and geometry.

The Senses, Consciousness, and Memory.—The sense-perceptions are the principal source of mental aliment: the memory is, as it were, the reservoir in which all these perceptions are stored. But it is not sense-impressions alone that are entrusted to the care of the memory. The internal impressions of consciousness, general ideas, in short, whatever has at any time constituted a state of consciousness, has a tendency to reappear in the mind, with greater or less force according as the first conscious state was more or less intense.

The condition of exact and faithful memory is, therefore, the vivacity of the original impressions. You have already done much for the culture of memory when you have provided the child with clear intuitions, and in another sphere, have presented to him none but well explained, and, therefore, well understood, general ideas.

But the culture of the memory should not look simply to the source, or what might be called the roots, of particular memories, whether concrete or abstract. Although Locke maintains, and a whole school of philosophers with him, that there is in the mind nothing more than a series of memories which are lodged there with different degrees of

tenacity according to circumstances; yet there is in reality an aptitude or tendency to recall, which nature or education makes more or less strong; a faculty, not simply for retaining whatever has already been perceived or conceived by the intelligence, but for apprehending other things, and for retaining new knowledge with an ever increasing facility and certainty.

The education of the memory, then, is not concerned simply with furnishing the mind with a great number of recollections; but tends to fortify the memory itself; and the only way to fortify it is to exercise it.

A Page of Rollin. — In the *Traité des études*, Rollin has written a few thoughtful pages on the culture of memory which are worth analyzing in this place.[1]

"Memory," says he, "is the guardian and depository of what we see, of what we read, and of all that our teachers, or our own reflections, have imparted to us."

Rollin then observes that a good memory is at once the gift of nature and the result of effort. From this he infers that it is very important to begin the cultivation of memory in children at an early age. But he is wrong in adding that "in their tender age they are as yet capable of hardly any other effort," forgetting that at least sense-perceptions, object lessons, and exercises also in illustrated reading, in writing and drawing, are equally well adapted to the capacity of children.

Rollin is next occupied with memories that are naturally sluggish and restive, which at first refuse all service and seem condemned to utter sterility.

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[1] See the *Traité des études*, book II, *de l'Intelligence des langues*, chap. III, art. 4: *De la nécessité et de la manière de cultiver la mémoire.* This study does not appear in the first edition of the *Traité.*

"We must not be easily discouraged," says he, "nor yield to this first resistance which we have often seen conquered and mastered by patience and perseverance. At first give a child of this nature a few lines to learn, but require him to learn them exactly. Try to sweeten the bitterness of this first effort by the incentive of pleasure, offering him none but agreeable things, such, for example, as the fables of La Fontaine, and thrilling stories."

One could not better point out the necessity of proceeding with care, of guarding against making the pupil's first lessons too heavy, of selecting for recitation easy and attractive texts.

Memory and the Intelligence.—Rollin did not forget that the memory needs the coöperation of the intelligence, that is, of the judgment; that therefore we must not be satisfied with having words repeated mechanically; that the child ought to understand the thoughts expressed, and should thoroughly comprehend whatever he acquires.

"A general rule," says Rollin, "is to apprehend clearly and understand thoroughly whatever we wish to learn by heart. The intelligence certainly does much to aid and facilitate the memory."

Repetition. — It is no less true that there is in memory something of the mechanical, so to speak; an element of mechanical routine. By reason of this element, the most useful of all mnemonic devices is repetition. A single reading of what one wishes to learn by heart does not suffice: the reading must be repeated. In this way the images are more deeply impressed on the mind. It is necessary also, after a few days, to review what has been learned.

The *Conduite des écoles chrétiennes*, which is the pedagogical manual of the schools of the Christian Brothers, gives some practical advice on this subject which we transcribe:

"To read a lesson from beginning to end, then begin anew, reading over and over, is not a good way to study, but rather to pursue the following plan:

1. Read the text two or three times with close attention;

2. Commit to memory one or two lines;

3. When these are well committed, learn as many more, and add them to the preceding;

4. When, by this means, one sentence has been learned, repeat it several times without looking at the book, and pass to the next to study it in the same manner."[1]

With repetition are connected the analogous processes, reviews, summaries and recapitulations, in the case of things that have to be retained without being learned by heart. Have the pupil review what you have taught him, condense it into a brief summary, or reproduce it in equivalent terms. Lasting recollections are not established at the first effort; to fix them, the impression must be renewed more than once. Memory, at bottom, is but an intellectual habit: the acquired tendency to think again what has already been thought. Like all habits, it grows strong by the repetition of the act.

Things Which Should be Learned by Heart. — With whatever discredit certain modern educators presume to cover verbal memory, or what has been called rote learning, it is impossible in instruction to do without the old process which consists in requiring things to be learned by heart. This has been abused, it is true, and in two ways, either by excessive verbal recitation, or by requiring literal memory in studies where it is not concerned; but its use must not for this reason be renounced.

[1] *Conduite à l'usage des écoles chrétiennes*, edition of 1877, p. 17.

Beside the exercise of recitation proper which pertains to quotations from authors, or bits of prose or poetry with which it is well to adorn the child's memory, there are in every department of instruction things which call for the use of literal memory, for example, dates in history, definitions and technical terms in geography, rules in grammar, formulas in the physical sciences, and certain precepts in morals. Even in the purely rational sciences, definitions and theorems, once explained and demonstrated, should be learned by heart. We agree with Mr. Spencer that it is not bad to teach the multiplication table by the experimental method; but we defy anyone to stop at this and exempt the child from learning it by heart.

The only thing to proscribe is the unsound practice which consists in the belief that to repeat words correctly is sufficient, that to understand them is unnecessary. In truth all those educators who have decried the memory are found to have condemned only the bad methods which employ at random the most precious of intellectual instruments.

Prejudices Against the Memory. — It is not the memory then, in its legitimate and necessary office, which can be attacked; it is only the abuse that is made of it in permitting it to encroach on the territory of other faculties. See, for example, what Naville says of it:

"In the education of children the memory usurps a prodigious place, to the great detriment of their intellectual and moral interests. It ought to be confined exclusively to the modest rôle of depository and conservator: to entrust to it a succession of reasonings and sentiments before having submitted them to the discernment of the faculties which ought naturally to take cognizance of them, is to invert the order of things."

In other terms, the memory exercises a bad influence only when it deviates from its function, when it impedes the action of the other faculties. Maintained in its proper functions, it renders the greatest services to the mind; and it is always, notwithstanding its detractors, the pedagogic faculty par excellence, that of which Mr. Bain was able to say that there is none which plays a more important part in education.

Relation of Memory to the Other Faculties. — The memory, in fact, is not merely the servant of words, the passive instrument of literal recitation: it is a living faculty which may be developed in all directions, in behalf of words, doubtless, but also in the service of ideas.

It is not sufficiently noted that a good memory supposes the development of most of the other faculties. In the well formed mind it is a witness which attests that all the other functions of the intelligence are regularly exercised. It is dependent on the sensibility: insensible souls have almost no memory. On the contrary, a child whose affections are active, who takes an interest in things, receives from everything which affects him a profound impression which is a guaranty of a long remembrance. So also the memory depends, not only on the judgment, but on the reason, on the order and the method which we give to ideas.

"It is indisputable," said Port Royal, "that we learn with incomparably greater facility, and that we retain much better, what is taught in the true order, because ideas which have a natural sequence arrange themselves much better in our memory, and are revived one by another."

Finally, the memory has need also of the coöperation of the will; it is the attention, the effort of the mind, which for the time fixes our recollections and permits us to recall

them, to bring them back at will under the eye of consciousness. It is not merely by a special culture, but by developing the sensibility, the higher faculties of the intelligence, the energy of the will itself, the entire soul, in a word, that we shall effect the education of the memory. It has its full force only in well-ordered minds, in souls whose general health is maintained by wise direction. We have all experienced the fact that, when fatigued by any over-exertion, our impressions have lost their freshness, our memory no longer manifests its ordinary facility for apprehending, nor its promptness in recalling.

Mnemonics.—Volumes, treatises of several hundred pages, have been written on mnemonics, that is to say, on the art of facilitating the operations of the memory.[1] Doubtless, with the artificial processes of mnemonics, we may accomplish wonders. The Abbé Moigno, an adept in this art, relates that he succeeded in astonishing the savant, Francis Arago, by reciting to him from memory the altitudes of the principal mountains of the globe. But however ingenious the systems proposed by the specialists in mnemonics may be, and whatever services they may be able to render in given cases, as when, for example, we have a hurried effort to make in view of an examination, all the artificial means, the conventional relations, which mnemonics hold in honor, are to be mistrusted. The memory is not strengthened by everything that aids it. To take another example, the use of written notes, the employing of this "paper memory," of which Montaigne spoke, may aid us in assuring the conservation of a series of particular recollections; but the general culture of the memory is not at all

[1] See, for example, *Principes et Applications Diverses de la Mnémotechnie*, Paris, 1833.

improved in this way; and what is especially important is, first of all, a memory which is self-sufficient, which is founded on real relations, on the natural association of ideas, on the method and logical order which are introduced into instruction, and which has no need of external support, and of purely mechanical processes.

Culture of the Imagination.—Imagination, in its lowest form, is only a higher degree of memory, a vivid representation of what constitutes the object of memory. It is evident, therefore, that in the interest of memory itself we should cultivate the representative imagination.

In reading, writing, drawing, and in exercises of orthography, that child will succeed best who has the greatest aptitude for representing to himself the image, either of the characters of the alphabet, or of the letters of which the words are composed, or of the objects which he draws. It has been justly said that to know orthography is simply to possess the image of words.[1] In literary composition, also, especially in narration, representative imagination will be of some assistance.

The only way of cultivating the representative imagination is through the careful education of the senses. The image is, in fact, only the residuum of a clear and distinct intuition which is preserved in the mind and which remains after the disappearance of the object which provoked it.

Imagination in the School.—But imagination soon disengages itself from this first inferior form. It becomes the active or inventive imagination, which either of itself combines intuitions, recollections and ideas, in order to con-

[1] See the work of M. A. Chaumeil, *Manuel de Pédagogie Psychologique*, p. 88.

struct a story, or a fable, or which at least takes a part in poetical and dramatic compositions, and in all the creations which proceed from an effort of the imagination.

There are then two elements in the culture of the imagination, thus understood: on the one hand, children should be inspired with a taste for poetry and art; on the other, though in a measure which can not be very great in the primary school, they should be exercised in composition, in original creations.

Nothing is more suitable to the mind of the child than this twofold work. The ancient educators were wrong in excluding the imagination from education. In the seventeenth century it was considered simply as an instrument of error. It was not yet recognized that the imagination has its appointed place in the intellectual economy, that it is dangerous only when it goes astray, when it is not regulated, and that the true way of regulating it is to nourish it and exercise it. In our time, people appear to be more just toward the imagination; but as the positive tendencies and scientific tastes tend to predominate more and more, it becomes more necessary than ever to give special attention to the development of a faculty which finds its satisfaction in lofty contemplations and in the creations of art.

Imagination and History.—It is especially by the reading of bits of poetry, of stories and well chosen romances, that the fire of the imagination is kept up. But even history with its characters and stirring narrations is also a school of the imagination.

A great Russian writer, Count Tolstoï, who, after having written admirable novels, has interested himself in pedagogy, claims that history can interest the child only because it appeals to his imagination.

"I am convinced," said he, "that all the characters, all the events of history, interest the pupil, not by means of their historical significance, but on account of their dramatic attraction, by reason of the art displayed by the historian, or more often by popular tradition. The history of Romulus and Remus is interesting, not because these two brothers founded the most powerful city in the world, but because it is attractive, pleasing, wonderful. In a word, the child does not have a taste for the history itself, but for the art." [1]

It does not follow from this that the teaching of history can forget its first duty, which is truth and accuracy; but without ceasing to be accurate, history may interest the imagination if we know how to make it, as Michelet expresses it, "the living resurrection of the past."

Literary Composition.—Let us then nourish the imagination of the child with noble images taken either from real history or from the purest inventions of human genius. But let us not think that our task, even in the primary school, is confined to this somewhat passive education of the imagination. To this must be joined a sort of active education, by discreetly exercising the pupil at brief efforts in literary composition. To get pupils to acquire a taste for this exercise and to succeed in it, is not, perhaps, so difficult a task as is generally believed. Count Tolstoï, in the work we have just quoted, tells us that whenever he would offer to relate any events to the pupils of the school at Yasnaia Poliana, all would become as joyous as if they had received a present. According to him, instructors are deceived when they choose for the subjects of early composition the description of an object, as a table or a bench, for example; he maintains, and not without reason, that

[1] Tolstoi, *L'École de Yasnaia Poliana*, p. 265.

those descriptions which bring into play only the representative imagination interest the child much less than the relation of a story. "The same pupil," says he, "who weeps over having a bench to describe, will give ready expression to a sentiment of love or hate, the meeting of Joseph with his brethren, or a quarrel with his schoolmates. Doubtless, exercises in composition involve other faculties than the imagination: they demand judgment and some reason; but they would always be useful, even though they could contribute only to the development of the imagination."

SUMMARY.

50. To the exercise of sense-intuition should be joined at an early hour the exercise of the memory and the exercise of the judgment.

51. All the faculties should be cultivated at the same time, taking into account, it is true, their relative importance, and also the natural dispositions of the child.

52. Whatever tends to intensify the initial impressions, whether perceptions, general ideas, or any other states of consciousness, also tends to fix the memory of these impressions.

53. But the education of the memory looks not merely to the conservation of particular recollections: it seeks to strengthen by exercise the faculty itself, that is, the power to acquire new knowledge with a constantly increasing certainty and facility.

54. The exercise of the memory consists at first in the literal recitation of easy, short, and attractive texts.

55. The child should never be required to learn by heart what he does not perfectly comprehend.[1]

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[1] If this precept means what the words fairly imply, it might better read as follows: Never allow a child to learn anything by heart. (P.)

56. Memory is a habit, and, like all other habits, grows strong by repetition; hence the importance of summaries, recapitulations, and reviews.

57. Although learning by heart should not be abused, there are in every department of instruction, rules, formulas, definitions, etc., which the child ought to know by heart.

58. All the evil that has been said of the memory is applicable rather to the bad methods which have distorted its true function, than to the memory itself.

59. Besides the memory of words, there is the memory of things, which acquires its full power only in a well ordered mind, and which supposes the exercise of all the other faculties, the sensibility, the logical sequence of ideas, the attention, and the will.

60. No great consideration should be given the artificial process of mnemonics, which gives the memory bad habits, which may facilitate and aid its action, but does not strengthen it.

61. The imagination, under its first form, is only a higher degree of memory: in this case it is simply representative, and the only means of exercising it is through the careful education of the senses.

62. The representative imagination renders educational service in reading, writing, drawing, and exercises in orthography.

63. The active or inventive imagination may and should be cultivated at school in two ways: 1st, children should be inspired with the taste for works of the imagination, as poetry and art; 2d, they should be trained in literary composition, in short original productions.

CHAPTER VI.

OFFICE AND CULTURE OF THE JUDGMENT AND REASON.

Judgment and Reasoning.—The perceptions of the senses and of consciousness preserved by the memory, are, as it were, the materials of the mind; but they do not constitute the mind itself, which uses and arranges these materials, which compares and coördinates them through the performance of its characteristic functions, judging and reasoning.

Judgment is the essential act of the intelligence; and the culture of the judgment is the crowning point of intellectual education.

To judge, in fact, if this word be correctly understood in the general sense which is given it in pedadogy, is to separate the true from the false in all things, in the affairs of practical life as well as in the theoretical researches of science. To have judgment is to avoid false solutions by adhering to the true; it is to show the principal causes of error; it is to possess that accuracy of mind which regulates the opinions and governs the actions of good and enlightened men.

Perceptions and recollections make minds more or less ornate, more or less instructed; but judgment alone really makes the man capable of thinking for himself, of being something more than a faithful mirror of external facts and the echo of other men's opinions. Perceiving and remembering are phenomena more or less passive; but judging is

to act intellectually. It is in judgment that the true activity of the mind manifests itself.

In this sense, we see that judgment is rather an aggregate of qualities or a habit of mind than a special and distinct operation. We no longer have to do with that spontaneous judgment to which even the simplest perceptions give rise. To see an object, in fact, is to judge that that object exists. The judgment of which we are speaking differs from this lower form of intellectual affirmation, in that it supposes a work of the mind — the comparison of several primitive judgments, the intervention of general and abstract ideas.

Pedagogically, the judgment and the reason are scarcely distinguishable, and in fact it is not impossible to prove that every judgment supposes a beginning of reason. They may then be united under the common name of the mind's active and reflective faculties.

Culture of the Judgment.—That the culture of these faculties of reflection is the most important thing in intellectual education, is a fact which is to-day universally recognized. The most belated in the old methods are the first to acknowledge it.

"Elementary instruction," says the latest edition of the *Conduite des écoles Chrétiennes*, "has assumed at the present day a particular character of which we must take account; proposing as its principal end the forming of the pupil's judgment, it gives less importance than heretofore to the culture of the memory. Above all it makes special use of methods which exercise the intelligence and lead the child to reflect, to account for facts, to pass from the domain of words into that of ideas."

For three centuries, it may be said that the culture of the judgment has been the watchword of French pedagogy.

Montaigne and the Education of the Judgment.—Montaigne was the first to set the example, and to throw into relief the preëminence of the judgment in the aggregate of the faculties which education seeks to form. In his view, a "well formed head" is worth more than a "well filled head;" in other terms, a sound judgment is worth more than an encyclopædia of knowledge. In history, for example, the important thing is not so much to know the facts, as to be able to account for them; not "to know where Marcellus, the Roman general, died, so much as why it did not behoove him to die there." In everything the child should be accustomed to discover the truth for himself; he will often be shown the way, but occasionally will be left to find it. He will be required to render an account, not of words merely, "but of their sense and substance." That which we desire him to learn, we will cause him to state "in a hundred forms, in order to be sure that he has made it really his own." We will impose upon him nothing "by simple authority:" we will appeal to his independent examination. We will not undertake simply to lodge in his head opinions blindly accepted and admitted for true without being tested. We will propose to him ideas, "money borrowed from others," only that he may assimilate them: he will transform and fuse them so as to make of them a product entirely his own, that is to say, his judgment; to form this judgment is the aim of his instruction, his toil, and his study.

How General Ideas are Formed.—In order to understand well what the education of the judgment should be, we must first consider that abstract or general ideas play an essential part in the operations of the mind which judges and reasons. It is these ideas which serve as the basis for particular judgments.

A good judgment then presupposes, as a preliminary condition, that the intelligence be able to handle with ease abstract and general ideas, and, consequently, to attach an exact meaning to the words which express them. In other words, the first step in the education of the judgment is the acquisition of abstract ideas, and the definition of general terms.

What are the processes which best subserve this purpose? It may be told in a few words, since the tendency of the child to generalize and abstract is much more powerful than is believed, and since it has need only of being aided and sustained in order to manifest itself at an early age.

The first rule is, never to employ with the child, nor allow to pass in a text to be read or to be learned by heart, a single abstract word, without explaining and defining it; and the explanation, of course, should be given, not in other general terms which would themselves need explanation—a thing possible only to a higher stage of intellectual development—but as far as possible in concrete examples, in an enumeration of particular objects of which the abstraction to be defined is, as it were, the *résumé*. For example, you meet for the first time in your lessons the word "science;" do not proceed to say to the child that science is a systematic body of knowledge, that the sciences are different from letters, and also from the fine arts. All these definitions, good for a dictionary, are not good for the intelligence of a child. They require, moreover, a long series of new definitions. No, but appeal to the recollections of the child, recall to his mind the geography which you have taught him, the arithmetic, the history, the physics which he has been studying. Try, by comparing these different sciences, to make him grasp what they have in common and in what respects they are alike; and you will

have succeeded in introducing into the mind of your pupil, in the place of a large unintelligible word, a clear and vivid idea.

Intuition and Abstraction.—The second rule is not to wait till the appearance of an abstract word renders necessary explanations, like those of which we had given an example; but to train the child to discover for himself, by considering the relations of things, the general idea which embraces these relations, and then teach him, if he does not yet know it, the word which expresses this idea. We should apply the method which English educators recommend, under the name of *juxtaposition and accumulation of examples*, and which consists in presenting to the child a series of objects of the same species, in such a way as to call his attention to their resemblances. In a word, we should profit by the natural inclination which leads children to generalize, and then to abstract.

In the first case, the mind of the child goes from the word to the idea which you lead him to understand. In the second, he rises by himself from his particular perceptions to the general idea and the word.

But, in both cases, it is the particular intuition which is the condition of the comprehension of the general idea. To-day we are no longer permitted to present abstractions before perceptions, definitions and rules before examples, words before things. Each general idea, each abstract word, should recall to the child a series of previously acquired perceptions—a body of previous experiences.

Liberty of the Judgment.—Once in possession of a certain number of abstract and general ideas, a child is in a condition to judge and to reason.

But how shall we provoke him to use this faculty, which is to enable him gradually to emancipate his mind, and no longer to limit himself to the servile repetition of what he has learned, but to think for himself?

Just here then are two things especially to be considered: first, by what means personal judgment is to be excited; then, how it is to be regulated. It is necessary, on the one hand, to develop the liberty, the initiative of the judgment; on the other hand, it is necessary to train it, to assure its accuracy.

Too many children who are undismayed in the recitation of their lessons, remain shy the moment a slight effort of individual judgment is demanded of them. All, even the best endowed, are more inclined to reproduce what has been said to them, than to express their own thoughts. We should, doubtless, respect this natural timidity of a mind as yet scarcely formed, which distrusts its own powers, and which but too often finds in its ignorance the excuse for its inaction. Yet, without doing violence to the child, it is well for the teacher as soon as possible to begin in earnest the task of mental stimulation. Let the teacher often interrogate his pupil, and, by questions skillfully graduated, furnish him the occasion of seeking in his little head an opinion entirely his own.

The first original idea which germinates in a child's brain, what a happy discovery! What promise for the future! Here, as in everything else, it is only the first step which costs. And having once entered on this course of original reflection, of intellectual activity, the child will continue, we may be sure, and will, of his own accord, seek to procure again for himself the pleasure which his first effort of invention caused him to experience.

If it is important that the initiative of the child be pro-

voked by multiplied interrogations, it is not less important that he be spared inopportune remonstrances, when, making use of the liberty of his judgment, he ventures injudicious observations, or puerile reflections. It is the teacher who is very often responsible for the inactivity of mind with which he reproaches his pupils. Do they say foolish things? he stops them short, interrupts their speech, humiliates them, discourages them: he stifles forever all inclination to venture the sincere expression of their opinions. Let us be more indulgent: let the child make mistakes at first, provided he thinks. The child would never learn to walk, if he were not permitted in the beginning to make many false steps and even a few falls.

Accuracy of Judgment. — Errors of judgment arise especially from ignorance or lack of attention. We judge incorrectly because we wish to express an opinion of things which we do not know, or because, even knowing them, we are precipitate in our judgments and are too hasty in our conclusions, from following the lead of our tastes and our passions. It is especially among children, naturally giddy and thoughtless, that irreflection is to be feared. This will be gradually remedied by gently showing the pupil the causes of his false judgment. It is not sufficient to say to him that he is mistaken. It is especially important to explain to him in what, and in what way, he is mistaken. By analyzing the error which he has made, he should be made to touch with his finger everything that he needed to know, everything on which he should have reflected, in order to avoid his mistake.

The difficulty, the delicate point is, that it is necessary at the same time to embolden and to correct the judgment; it seems contradictory that one may be able at once to

encourage the flight and correct the faults of this faculty. We reply that it is especially a question of tact and also a question of time. The child's errors may be criticized with discretion and without anger, so as not to discourage him. On the other hand, it is in the beginning especially, and with the youngest children, that it is necessary to excite boldness of the judgment: when the pupil shall once have been accustomed to think for himself, less tenderness may be shown and he need not be spared reprimands and remonstrances.

We have just sketched the picture of the formation of the judgment; let us now see how instruction should be directed in order that it may deserve to be considered as a school for the judgment.

Active Methods.— M. Maneuvrier, a writer on secondary instruction, in his recent book *l'Éducation de la bourgeoisie*,[1] has used the popular expression, "active methods," to designate those processes of education which address themselves directly to the mind, which seek first of all to develop the judgment, which, instead of loading and crushing the child's memory simply under the weight of endless didactic lessons, appeal to his individual activity, to his personal initiative.

The bad methods are the *passive methods*, that is, those that make machines, as Girard expresses it, "word machines, writing machines, reciting machines." They are employed by those who talk continually, who forget themselves in long expositions, who never allow the pupil to speak, so that the teacher does everything, the pupil nothing. "I would not," said Montaigne, "have the teacher alone think and speak; I would have him hear his pupil speak in turn."

[1] *Éducation de la bourgeoisie sous la République*, Paris, 1888.

The good methods, on the contrary, the active methods, secure the constant intervention of the pupil ; they exercise him in judging, in thinking, and in expressing his thoughts. They accustom him, not only to find for himself a part of what he is to learn, and, after we have started him on the way, to discover bits of truth; but they accustom him also to speak, to think aloud.

"The true methods," says Maneuvrier, "are those which secure an almost equal intensity of thought in pupil and teacher. Let the teacher begin by setting forth the results of the science; let him make his instruction attractive by a short, substantial, well-prepared lesson. . . . . Nothing better. But that is not sufficient. The child must, as we say, put his own hand to the plow. Yes! the child should work; should speak, and write; should judge and criticise, should praise and blame, should experiment and reason; he should try his hand at all this under the eye and under the direction of an expert and devoted teacher. Such is the fruitful apprenticeship which will serve him always and everywhere."

The Judgment and the Different Parts of the Programme. There, are, properly speaking, no special lessons in judgment. The education of this master faculty of the mind should result from every department of instruction.

Girard has pointed out this result in the study of language. For the grammar of words he would substitute the grammar of ideas, that is, oblige the child to discover for himself the rules of syntax, to reason on the expressions which he employs and on the forms which he applies. "Thus the study of language," says Gréard, "was for him only an instrument by the aid of which, while teaching the pupil what is indispensable for him to know, he sought to exercise his judgment."

The study of number lends itself even more than the

study of grammar to the exercise of the judgment and the reason. "It is on the practice of calculation," says Gréard, "that Pestalozzi established his pedagogical doctrine," which had for its essential end to give to the child's mind "freedom of activity, self-command and accuracy." It is to be remarked, however, that calculation develops the reason proper, rather than the practical judgment. The demonstrations of arithmetic present an exactness, a severity, and also an abstract simplicity, which are by no means allowed in the delicate, complex and intricate questions of real life. But let us not imagine for all that that the habits of order and of method contracted in the study of the mathematical sciences have an indifferent value in preparing us even for practical judgment. It is to be noted, moreover, that instruction in number, while it is in itself a training for the reason, presenting as it does a systematically connected series of judgments and ideas, may become also an exercise in practical applications, if the teacher knows how to make an apt selection of problems taken from real life.

History has always been considered as the study best suited to form the judgment. For this purpose, we must show the child, not a simple succession or juxtaposition of facts, but a chain of causes and effects. He must be exercised, not merely in repeating from memory what has been related to him, but in discerning for himself the causes of events, in judging the men of whom he has been told, of appreciating their actions.

Imitation and Judgment.—In a word, it is by applying everywhere an active method, that the instructor will make of his pupils, not automatons who repeat mechanically the lesson learned, but living minds, capable, according to the extent of their knowledge, of pronouncing accurate and decided judgments.

"Many of the things which are learned on the benches of the class room," says Gréard, "are sooner or later effaced from the memory. But that which remains from well-directed studies, that which should remain from a primary education when a culture of the morals has been added to the intellectual culture which trains the mind, is a sound and enlightened judgment."

Let us not forget, however, that even in the education of the judgment and of the reason, there is a part to be played by imitation, by mechanical repetition, by the virtue of example. It is not merely by an incessant appeal to the intelligence of the pupil, by pressing questions, by offering him occasions for exercising his analytical faculty and his power of reflection, that the teacher will develop his judgment. It will consist also in proposing to him only good models, in giving in himself the example of a judgment always correct, always reflective. In this atmosphere of good sense and reason, the child, through an instinctive imitation, will contract, in his turn, the habit of reflection and prudence. The qualities which characterize the instruction of the teacher will be quietly transmitted, by a sort of insensible contagion, to the mind of the pupil. And this is why an English educator could say: "The science of education consists in supplying the mind with facts in the order which best trains the reason."

Education of the Reason.—All that we have just said is applicable in part to the education of the reason, the reason being, under different forms, but the series of intellectual operations which lead up to and end in the judgment. Reason, without doubt, in its highest and most exact form, deserves special study: this will be the aim of the following lesson. But before becoming the essential spring of method, before being the principal instrument of scientific research,

the reason already intervenes in the simplest operations of the infantile judgment. In truth, judgment and reason are but different degrees of intellectual activity and of personal thought; and as Gréard expresses it in a page which deserves being quoted, and which summarizes the whole of this lesson, the purpose of education is to put this activity into movement, to excite it little by little by easy elementary exercises. The higher qualities of the reason will then appear spontaneously.

"If the reason of the child is still frail, with what accuracy it follows the hand that knows how to conduct it with skill!

"The best teacher is he who knows how to put this activity into movement. When the child has once made a start, it is sufficient to stimulate him gently, and to call him back when he goes astray, while always leaving to him, as far as possible, the toil and the satisfaction of discovering whatever we wish him to find. Let him form the habit of justifying whatever he asserts, and of expressing himself freely in his own language; allow him even to expose himself to error and have him correct it by showing him wherein he has failed in reflection; this will be the most profitable of lessons. When, from the beginning to the end of his studies, he shall have been subjected to this discipline, we may be assured of having formed a good mind, capable, whatever be the profession which he chooses, of a rational and successful application." [1]

SUMMARY.

64. The perceptions of the senses and of the consciousness, preserved by the memory, are, as it were, the materials of the mind; but the characteristic activity of the mind manifests itself in the judgment and the reason.

65. Since Montaigne, all educators are agreed in rec-

[1] M. Gréard, *Éducation et Instruction;* Primary Instruction, p. 91.

ognizing that the culture of the judgment is the crowning work of intellectual education.

66. The judgment, considered as the master faculty of the mind, is less a distinct operation than an aggregate of qualities, an intellectual habit; it is the synonym of accuracy of mind; it consists in discerning, in all things, the true from the false.

67. The exercise of the judgment, thus understood, supposes the intervention of general or abstract ideas.

68. In order that the child may deal surely and easily with general ideas and abstract terms, two rules must be followed: 1, never let an abstract term pass without explaining it to the child, at first by concrete examples, later by definitions; 2, accustom the child, by presenting to him a series of objects of like nature, to grasp their relations and resemblances, and to discover for himself the general idea.

69. Once in possession of abstract and general ideas, the child is capable of judging and reasoning; and the second step in the education of the judgment consists: 1, in exciting the initiative and the liberty of individual judgment; 2, in assuring its soundness and accuracy.

70. The liberty and the initiative of the judgment may be stimulated by multiplying interrogations, by soliciting the child's reflection, and by refraining from pointing out to him in an unkind spirit the errors which he may have committed.

71. Soundness of judgment may be assured by preventing the two principal causes of our errors: ignorance and precipitation or irreflection.

72. Instruction may be a discipline for the judgment only on condition that the teacher employ active methods, or those which address themselves directly to the mind.

73. Every subject of instruction, grammar, arithmetic,

history, etc., should afford the teacher an occasion for exercising the judgment.

74. Imitation, or the influence of example, also plays a part, but a secondary part, in the education of the judgment; the qualities of systematic instruction are transmitted by a sort of contagion to the mind of the pupil.

75. The culture of the judgment is confounded with that of the reason, the reason intervening in the simplest operations of intellectual activity.

CHAPTER VII.

METHOD.—ITS DIFFERENT PROCESSES.—INDUCTION AND DEDUCTION.

Method in General.—Method, in its general sense, is the order and continuity which we introduce into our thoughts and acts. It supposes the clear conception of an end to be pursued, and the organization of means for its sure attainment. From this point of view, method enters into every reflective undertaking, into all deliberate conduct. Nothing is well done without method, whether a military expedition, an industrial enterprise, or a voyage of exploration.

Thus understood, education also has need of method. It will be methodical if the teacher leaves nothing to chance, does not count on the good fortune of improvised effort, prepares his lessons in advance, calculates the employment of his time, regulates his work and that of his pupils according to a regularly prescribed programme; in a word, if he conducts all his school work with reflection and order.

Particular Methods.—But to follow some order simply is not sufficient: there is for each category of enterprises a special order adapted to the nature of the work to be done. There is, for example, the scientific method, which has for its end the investigation of truth, and there is the pedagogical method, the end of which is to communicate truth.

In this sense, there are then many distinct methods; and each particular method is a body or a system of rational pro-

cesses and coördinate operations, which experience and reason sanction as the best possible for the attainment of a given end.

Importance of Method. — No one questions the utility of method: to do so would be boldly to avow a preference for irreflection, heedlessness, and disorder, to prudence and sagacity. The absence of method condemns to impotence the most brilliant minds; it renders sterile the most laborious efforts. With method, on the contrary, even mediocre minds attain the end; they attain it with less difficulty than disorderly and heedless intelligences which lose themselves in their marches and counter-marches. To use Bacon's expression: *Claudus in via antecedit cursorem extra viam*, "the lame man who follows the good road outstrips the fast runner who departs from it."

But what is not so universally recognized is the utility of the study of methods. What good, says one, is to be derived from studying in books the learned methods which theorists have analyzed in minutest details? Is not the true method that which each one derives for himself from his personal reflections and his own experience?

Certainly one does not learn method in a manual of logic or pedagogy, as he learns the multiplication table in an arithmetic. We do not find a ready-made method in the writings of logicians, as we might find a rule in a box of instruments for use on paper. The most perfect method is worthless if we do not know how to use it. The value of the most perfect instruments depends on the deftness of the hand that uses them.

"The best tool," as M. Marion justly remarks, "is that which one selects for his hand and for which his hand is made."

But all these considerations do not tend to demonstrate the inutility of methods: they prove simply that it is necessary to appropriate, to assimilate, by fruitful reflection, and intelligent application, the methods whose theoretical rules are studied in books. These methods must become living, they must not be simply processes mechanically employed, and utilized without a consideration of their value. They must be the very spirit of him who applies them.

No doubt should be thrown on the value of processes which have been sanctioned by the experience of ages; so that even a man endowed with ingenuity, if he should desire to construct his own method, would do scarcely more than rediscover with effort what others have practiced before him, and fall back into the beaten paths. Would it not be better for him to acquaint himself at once with the road, through those who have walked there before him?

It does not follow from this that methods are regulations unalterable and fixed once for all. There is certainly much to be expected yet of future progress. As Madame Necker de Saussure has said, "Methods should be in a state of perpetual improvement." The essential part, however, is already established, and it is this essential basis that it concerns us to study, leaving the rest to the free inspiration of innovators.

Scientific Method. — It is logic that studies the rules of the scientific method. In this sense, method is a body of processes to be followed in the investigation and discovery of truth. Thus understood, according to the most competent logicians, method comprises four parts: observation, generalization or definition, induction, and deduction.[1]

[1] See, for example, *Inductive and Deductive Logic.* — Bain.

The first operation is restricted to facts, the other three to the generalization of facts.

The starting point of all science is evidently observation, the knowledge of particular facts. If it concerns the external world, observation supposes the exercise of the senses; if it concerns the internal world, the mind, the thinking subject, observation supposes the exercise of consciousness. Observation, to be exact and complete, admits, moreover, certain rules which vary with the nature of the objects observed.

The second step in method is definition. By comparing, classifying, and assimilating, according to one or more common qualities, a certain number of particular objects previously observed, the mind arrives at a general idea the meaning of which is expressed by the definition which may be given it. This second operation supposes several successive stages: comparison, classification, abstraction, and the use of general terms; but all these operations which are involved in generalization may be summarized in the definition. We do not have, in fact, a general notion save on condition of being able to define it. All systems of logic have precise rules for definition.

Induction is also a generalizing process, but it differs from the intellectual movement which ends in definition, in that it conducts the mind, not to a simple notion, but to a proposition. A general idea, as iron, magnetic property, is one thing; a proposition, a judgment, an inductive truth, as, iron may acquire magnetic properties, is another. General ideas are valuable, moreover, only as they may enter as elements into inductive propositions.

When induction has done its work, it remains to apply the truths which it has established to new cases. This is the special office of deduction, which, taking for a starting point a general proposition and comparing it with other

general propositions or with some particular facts, derives therefrom new propositions. For example, induction teaches us that iron is a magnetic substance; now, we know that within the earth are masses of iron; whence this conclusion, that the existence of these masses of iron in the interior of the earth is the cause, or at least one of the causes, of terrestrial magnetism.

It is to establish with precision the conditions of the inductive and deductive processes, these two forms of reasoning, that logic devotes the major part of its efforts.

Method in Pedagogy. — Now, laying logic aside, let us return to pedagogy, and we shall be convinced that, for the communication of truth, education has at its command scarcely any other means than those which the scientist employs for the discovery of truth.

It is even to be observed that method in pedagogy has followed, step by step, in their evolutions and transformations, the changes introduced by the progress of the centuries into the scientific method. As long as deduction remained the sovereign mistress of logic, formalism, the abuse of abstractions, and the predominance of general rules and formulas, were the supreme law of pedagogy. It was only when logic reformed its method, when Bacon dethroned deduction and the syllogism to enthrone experience and induction, that, by an almost immediate consequence, education also began to recommend induction, observation, and inductive processes. Comenius has been justly called the Bacon of pedagogy, because he, so to speak, simply applied to education the principles of the *Novum Organum*.[1]

[1] See our *History of Pedagogy*, p. 123.

Methods of Instruction. — The pedagogical method, then, is, in truth, merely the application to instruction of the rules of the scientific method.

For organizing knowledge in the mind of the child, there are rules analogous to those which the scientist applies in constructing science itself.

Moreover, the method of instruction will vary, (1) with the nature of the object to be taught: grammar and arithmetic, for example, will not be taught by the same method; (2) with the age of the pupil: we will not teach history to the pupils of a primary grade by the same methods that we employ in teaching pupils in the higher grade; (3) and, also, with the different grades of instruction: in the normal school a study will not be pursued in the same way as in the primary school.

In other words, the method of instruction should always conform and adapt itself to these three general rules: (1) the nature or particular character of the knowledge to be imparted to the child; (2) the laws of the progressive evolution of mind, at the different periods of scholastic age; (3) the peculiar end and scope of each grade of instruction.

Let us add, also, that the best method of instruction is recognized in this: that it facilitates the work of the pupil, not that of the master. It is not a question of putting into the teacher's hands short methods, mechanical instruments which relieve him of activity and effort; but of having him employ the processes best adapted to the nature and wants of the pupil.

"The teacher is always involuntarily inclined to choose the process of instruction which is most convenient for himself. The more convenient this process is to the teacher, the more incon-

venient it is to the pupil. That alone is good which satisfies the pupil." [1]

Methodology. — Although we do not like the word, it must be pronounced; methodology is the term which is used, especially abroad, to designate that part of pedagogy which treats of methods of instruction. It is thus defined by the latest treatise on pedagogy which has appeared in Belgium:

"Methodology is the science of instruction. It sets forth the principles, rules, and processes which constitute method. It comprises general methodology and special methodology; the one treats of points which concern all branches of study; the other is occupied with each branch in particular."

Methods, Modes and Processes. — We have noted elsewhere [2] with what strange prolixity foreign educators, in the study of methods, multiply distinctions, divisions and subdivisions, so as to enumerate, in an empty verbiage, a multitude of forms, processes or methods, each of which has its definition and its laws.

Much is to be gained in avoiding this new scholasticism and this verbal formalism. Without multiplying distinctions, it is sufficient to distinguish methods, forms, modes and processes.

Methods, which are of first importance, correspond to the order followed in studies: they reduce themselves to two, which may be called inductive and deductive, according as induction or deduction predominates.

But there is something more than the internal order of the truths which the teacher sets forth or suggests, something more than the inductive or deductive course of instruction.

[1] Tolstoï, *L'École de Yasnaia Poliana*, p. 98.

[2] See Compayré's *Lectures on Pedagogy*.

There is also an external form which is given to instruction; the teacher either does all the talking himself as he sets forth what he wishes to have learned, or he takes turns with his pupils, as he interrogates them and provokes their replies. Hence two forms of instruction: the expositive or didactic form; the interrogative or Socratic form.

We must recall also the old distinction of *modes* of instruction, individual, simultaneous, and mutual, according as the teacher addresses himself to an individual pupil, or to a whole class, or again, withholding his aid, as he leaves the pupils to instruct one another. The simultaneous mode is evidently the only one which, as a general rule, is adapted to public instruction. But it is not necessary, however, to proscribe absolutely the accidental and exceptional use of the two other systems. The teacher should be able, in his expositions, while addressing all to address each one individually, and to find, when explanation is necessary, details which are more particularly adapted to the aptitudes and tastes of this or that pupil. Interrogations, moreover, are always individual. On the other hand, in classes which are too large, but are still entrusted to the direction of a single teacher, it may be useful to resort sometimes to mutual instruction.

Finally, let us note the distinction between methods and processes. Methods fix the general principles which preside over instruction, which regulate the order and sequence of studies; processes are the particular means which are employed in the application of methods. For example, to demonstrate geometrical truths is a method, a deductive method; to explain them on a black-board and have them in turn repeated by the pupils, is a process.

Observation and Definition.—It is with methods that we are chiefly concerned in this place. As we have said, peda-

gogical methods are, so to speak, nothing more than scientific methods applied to instruction. We shall find in them, therefore, the four successive processes which logic distinguishes in the method of the sciences; and first, observation and definition.

Observation, or in other terms, intuition, is the necessary beginning of all instruction as of all science. Certain educators have wished to make intuition a special method complete in itself. This is as absurd as if one should wish, in the sciences, to reduce everything to the simple observation of facts. The truth is, that intuition is a part of method, one of the essential elements of all instruction truly rational and adapted to the aptitudes of the child. One could not multiply too much, especially in the beginning of instruction, the direct perceptions which insure a clear and vivid intuition of objects.

But these particular observations are only a point of departure, a preparation. They would be of no service of themselves if they were not the elements of generalization, of that intellectual activity which enables the mind to discern in the diversity of individual things, common points, resemblances and relations, and thereby to conceive general notions which find their formula in well framed definitions.

It is a difficult art, that of definition, in pedagogy as in the sciences. According to the rules of logic, definitions should be clear, they should employ words that are already familiar or intelligible to the pupil; they should be exact and complete.

Let us distrust those verbal definitions which teach nothing, which are mere tautologies, and which Belgian educators do not sufficiently avoid when they say, for example, that "judgment is the faculty of judging, reason is the faculty of reasoning." The definition, to be anything more

than useless verbiage, should determine the essential elements of the idea defined: for example, judgment is the act of affirming the relation of two ideas; reason, the act of affirming the relation of two judgments.

Induction and Deduction.—Observation bears only on particular facts, and definition on general ideas. The human mind would be very much limited if it could not go beyond facts and ideas. It is through reason that it extends its domain, and that, profiting either by its first intuitions or the general notions derived from them, it is able, either inductively or deductively, to handle these elementary data, and to arrive, not merely at ideas, but at general truths.

From this point of view, that of the logical order of truths, there are only two methods of imparting knowledge, as there are only two methods of acquiring it: induction and deduction. Sometimes the teacher takes for a starting point facts observed in intuition and generalized into definition; and leading the pupil into the work of his own thought, he rises to the law which governs these facts,—this is the pedagogical application of the inductive method. Again, he takes as his basis general truths; these general truths being either rational principles or inductive propositions; and by deduction he passes from these principles, rules, and general laws, to applications, to the particular cases which naturally flow from them. The method then becomes deductive.

Let us take examples. In teaching grammar, if we first explain the rule and then seek its applications, the process is deductive; on the contrary, if we first present to the child examples, or particular cases, in order to suggest to him the idea of the rule, the process is inductive. The teacher of geometry who at the outset lays down axioms and defini-

tions, and proves that such or such a theorem is their necessary consequence, makes a demonstration, or, what amounts to the same thing, a series of deductions. The teacher of physics who appeals to the observation of his pupils, experiments before them, shows them the objects to be studied, analyzes their elements and infers from them a general law, employs successively the different processes of induction. In history also, we proceed by deduction or induction according as we take for our starting point the definition of feudalism, for example, or the different facts which constitute feudalism.

Inductive and Deductive Method.—In fact, in every department of instruction, both induction and deduction are employed in turn.

Thus, even in arithmetic and geometry, it is a good method to resort at first to inductive processes, experimental calculation, or to sensible observations of geometrical forms. Just so in the physical sciences deduction also plays a part; as, when a general law has been inductively established, we deduce its consequences.

It is nevertheless true that induction predominates in the so-called sciences of observation, physics, and the natural sciences; deduction, on the contrary, in the abstract or exact sciences.

As logicians often distinguish these sciences by calling the first the inductive sciences, and the others the deductive sciences, so in pedagogy we call that the inductive method which most often appeals to induction; and that the deductive method in which the principal part pertains to deduction.

Analysis and Synthesis.—When we have distinguished in the method of instruction the inductive and deductive methods, everything on this point has been said; and it is

altogether useless after this to resort to other fine terms, too much favored in certain schools of pedagogy, as, for example, analysis and synthesis.

There would be, according to certain educators, an analytical method and a synthetical method. The best proof that the words analysis and synthesis should be banished from pedagogy, is the fact that authors are not agreed as to what these terms should mean; some call synthetic what others call analytic, and *vice versa*. Thus, Horner, a Swiss educator, asserts that "the synonym of demonstration is deduction and analysis; that the inventive process is often confounded with induction and synthesis." Quite to the contrary, a French educator, M. Charbonneau, whose work has for a long time been considered classic, affirms, and general usage sustains the affirmation, that the demonstrative method is also called synthetic, while invention or induction is called analytic.

In truth, analysis is at once an inductive and deductive process. In the first place, analysis consists in separating the elements of a concrete substance; as, for example, when we decompose water. In this case analysis is directly connected with experimental and inductive processes. But there is also an abstract analysis, purely mental, which consists in distinguishing the different elements of a general idea. In this case analysis is a particular aspect or phase of the deductive method.

We shall not speak of synthesis, the meaning of which is still more complicated and confused. We shall conclude that there are, at bottom, but two essential methods, induction and deduction.

The Method of Descartes.—We are far from having studied all the questions involved in the problem of method. We

should remember, first of all, that, as Descartes says, the principal thing is not in possessing a good mind, but in applying it well. In one sense, a bad method, or any procedure whatever, is better than no method at all.

"Those who walk very slowly," says the author of the *Discours de la Méthode*, "may make better progress if they always follow the right road, than those who run, but depart from it;" and, although the rules of Descartes were established exclusively in view of scientific research, pedagogy may derive profit from them. These rules, as we know, are four in number, and are summarized as follows:

(1) Accept as true only what is evident, carefully avoiding haste and bias in our judgments; (2) divide difficulties in order the better to solve them, which is equivalent to saying, use analysis; (3) conduct your thoughts with order, beginning with objects the simplest and most easily understood, in order to arrive, little by little, as by steps, at the most complex and most difficult knowledge, a process which tends to place intuitions or particular observations before abstract and general rules; (4) finally, make complete enumerations, so as to omit nothing.

SUMMARY.

76. Method, in general, is the order and the arrangement which we introduce voluntarily into our thoughts and our actions; it supposes a clearly conceived end, and carefully calculated means.

77. There are as many methods as there are human enterprises and efforts. Particular methods are a body of rules and rational processes adapted to a given end.

78. To say that method is useful and necessary, is to say simply that we prefer order and reflection to irreflection and carelessness.

79. It is worth our while to study the methods sanctioned by experience, for to follow them we must know them.

80. But the study of methods is useful only on the condition that they are appropriated and made our own by reflection and use.

81. The scientific method studied by logic comprises four successive processes: Observation, definition, or generalization, induction and deduction.

82. The pedagogical method is scarcely more than the application to instruction of the rules of the scientific method. So long as the reign of deduction and the syllogism lasted in the sciences, formal, mechanical and deductive methods prevailed in pedagogy.

83. The method of instruction should vary with the nature of the knowledge, with the age of the pupil, with the purpose of each grade of instruction; it should be accommodated to the pupil rather than to the teacher.

84. Methodology is the term applied to the science of the methods of instruction. There is a general methodology and a particular methodology.

85. General methodology treats of the essential methods which are employed in all parts of instruction. The methods which regulate the logical order of the truths imparted differ, moreover, from the *forms* of instruction, which are expositive or interrogative, from the *modes*, which are simultaneous, individual or mutual, and finally, from *processes*, which are but the detailed application of general methods.

86. The pedagogical methods suppose four distinct processes: first, the observation or intuition of particular facts; second, the generalization of the ideas which the definition formulates and explains.

87. The two other processes of method are induction and deduction; induction, which rises from facts observed

or generalized to general truths and laws; deduction, which descends from rules, laws and principles to particular cases.

88. Induction and deduction play a part in all parts of instruction, but induction predominates in the study of the physical and natural sciences; deduction, in the study of the abstract sciences.

89. Method is said to be inductive or deductive according as it employs more frequently induction or deduction.

90. Analysis is simply one of the elements, either of the inductive method or of the deductive method.

CHAPTER VIII.

METHODS OF INSTRUCTION — SPECIAL STUDY OF THE PROCESSES APPLICABLE TO EACH SUBJECT IN THE COURSE.

Methods of Instruction. — There are two ways of studying methods of instruction and what are called "the processes applicable to each subject in the course."

We may take up the different subjects in the course, one after another, and inquire how they ought to be taught, devoting special chapters to reading, writing, grammar, history, ethics, etc. This is the plan followed in our *Lectures on Pedagogy*,[1] and we shall not repeat what is there said.

Or we may examine the differences which result from the peculiarities inherent in each study, and then generalize, or examine *in abstracto*, the methods that are employed in all the subjects of the course. This is the plan which we shall follow in this treatise. Whatever, in fact, may be the nature of the object studied, we must always return to some one of the elementary processes which are modified doubtless in accordance with the differences in the subject matter to be transmitted, but which, in reality, are always the same: sense-intuition, mechanical exercises, the recitation, the study of books, the didactic lesson, interrogation, themes, exercises in composition, personal invention.

[1] *Lectures on Pedagogy*, D. C. Heath & Co., Boston.

Here we have, so to speak, the *methodic elements* of all instruction, which we shall examine one after another.

General Principles. — Belgian educators pursue another course; they enumerate in never-ending lists, the fundamental principles of a good method. For example, here is the catalogue drawn up by M. Aubert, director of the Normal School of Mons. He first distinguishes six categories of principles according as they have particular reference: 1, to the teacher; 2, to pupils; 3, to both teacher and pupils; 4, to the subject-matter of the lesson; 5, to the exposition of the lesson; 6, to the sequence of studies. Each one of these categories would itself comprise different principles, such as (1) the necessity of the teacher's vocation and of his preparation for it; (2) the necessity of attention, of the real exercise of the intelligence, of the active co-operation of the pupil, and his need of personal effort; (3) the necessity of moderation in the work required, of a just distribution of the teacher's efforts among all his pupils, of a correct classification of pupils, of a judicious assignment of place to each pupil; (4) the necessity of subject-matter which is both useful and attractive; (5) the necessity of intuition and animation; (6) the necessity of a wise co-ordination of studies, the necessity of studies by concentric courses, the necessity of a slow and progressive course,— in all, seventeen principles, no one of which, surely, is unworthy of arresting a moment's attention.

However, it is easy to reduce this long list, and to condense into a few essential rules the principles which should guide the instructor.

First, it is quite useless to speak of the teacher's call, for we address ourselves only to competent instructors, and we have no advice to give to those who do not possess the

qualities necessary for the work of teaching. On the other hand there is no occasion to examine the utility of the subjects taught; it is the programme which determines these, and in its construction it is evidently inspired by considerations of utility. The place to which pupils should be assigned, and their classification, are not principles of teaching, but at most only rules for the material organization of classes. So also the distribution of studies by concentric courses is but a process which may be applied to most branches of instruction,—to history, for example. Attention, the real exercise of the intelligence, the active coöperation of the pupil and his personal efforts, these really constitute but a single principle,—that which requires the pupil to participate in the work of the class, and forbids the teacher to act alone in the presence of inert and passive auditors. We see, then, without stopping to dwell on the matter, that the analysis made by Belgian educators is defective, either because it multiplies subtle distinctions too much, or because it connects with instruction material processes which have no direct bearing on instruction itself.

We may then restrict ourselves to the analysis which we have previously given, and which comprehends all the elements essential to methods of instruction.

Respective Functions of Teacher and Pupil.—In all instruction there is certainly a part for the pupil and a part for the teacher. But, however necessary it may be to give greater and greater extension to the rôle of the pupil for the purpose of calling into play his intellectual activity—which is the grand purpose—the teacher's part is always preponderant. Even when he does not intervene directly by verbal explanations or formal lessons, it is he who

controls the pupil's work, who chooses the material objects to be observed and the texts to be recited; who traces on the board in the presence of his pupils the copies to be written; and who, finally, is in all things the pupil's guide and inspiration.

But, on the other hand, the pupil ought never to remain inactive. Even when the teacher is speaking, and seems alone to be active, for example, in a somewhat extended exposition, the pupil intervenes and takes part in the master's work by his constant attention, by the notes which he takes, and by his effort to follow and comprehend the lesson which he hears.

Instruction can be profitable only on the condition of being a process in which teacher and pupil incessantly coöperate, where the action of the teacher is of no avail unless it excites the corresponding activity of the pupil. "Stimulate self-activity," it has been justly said, "is the grand precept of instruction." It might well be called the unique precept; for it contains in germ all the others.

Intuition. — There was a time when methods of instruction and study consisted merely in dictation by the teacher, and in learning by heart by the pupil. The appearance of the book was a step in advance; for the book, although capable of misuse, if we seek in it nothing but words and an exercise of verbal memory,— the book explained in class or read attentively by the pupil, is an excellent instrument of reflection, personal criticism and fruitful meditation. But modern pedagogy has found something besides the book; it has placed the mind of the child, without intermedium, face to face with real objects; in the immediate and direct intuition of things, it has undertaken to find the starting point of all intellectual culture. The book is

merely the thought of another; and the oral lesson of the teacher is also the thought of another; but intuition is the personal thought of the pupil, excited and provoked by the sight and handling of objects to be known and studied.

Intuition, then, is one of the essential elements of every method of instruction. It is the best introduction to the study of language; for it is no longer admissible to teach words to the child, at least in the first years of life, without presenting to him the things which these words designate. And even at the age when the pupil is well nigh in possession of his mother tongue, intuition ought still to intervene, in order to assist in the acquisition of scientific knowledge and to facilitate the study of history and geography. There is hardly any part of the programme where we cannot usefully employ intuitive processes.

"Do not tell your pupils that the gilly-flower has four petals and five stamens, without making them examine it. Do not tell them that sorrel is sour, without making them taste its leaf. Do not speak to them of the composition of the air, without preparing in their presence oxygen, nitrogen and carbonic acid. Do not describe the costume of the ancient Belgians, without a picture which represents it. Teach geography with globes, maps and engravings. Speak of the virtues and defects of character in connection with the conduct of children, and with narratives reciting facts which they can comprehend." [1]

Intuition, moreover, does not consist merely in causing natural objects to pass before the eyes of the child; but in order to organize sense instruction it may resort to artificial means, to diagrams, to illustrations, and to pictures.

School Apparatus. — If instruction were but an intellectual commerce between the mind of the teacher and the mind

[1] J. Aubert, *op. cit.*, p. 170.

of the pupil, it would suffice for the equipment of the learner and the completeness of the school outfit that the pupil have in his hands the material for writing and taking notes. But the oral lesson of the teacher is not all. It must have the aid of material instruments, and must put in operation, so to speak, certain school implements, all of which tend to the same end, and are the auxiliaries of intuition. Of this number are the blackboard and the numeral frame.

The Blackboard. — Heretofore the best schools were those which consumed the most ink and paper. To-day the best schools are those where teachers and pupils use the most chalk and most often resort to the use of the blackboard. In American school-rooms the entire wall is transformed into a vast blackboard, where several pupils can work at the same time. At the very least, it is necessary that there should be a blackboard in every school-room, in plain sight, on which the teacher translates his lessons in a way that appeals to the eye, not only in the teaching of number, but in reading, writing, grammar — in a word, in almost all the studies of the course.

In one of his memoirs, M. Gréard recalls the fact that in the year 1800, in a report addressed to the prefect of the Seine, Citizen Zolver mentioned as a wonder the blackboard which he had found in a certain school. So, also, as late as the year 1867, wall maps were found only in schools of the higher grade:

"Just as though," adds M. Gréard, "indispensable in all grades, these aids were not more particularly useful in the classes where, in order to incite the intelligence of the child, it is necessary to begin by appealing to his eyes! In subjects which admit of description, every lesson which can terminate in a palpable demonstration, and which is not brought to that point, is incom-

plete and insufficient. In the more abstract subjects, such as number, spelling and history, the board which, under the living voice of the teacher, rallies every eye, and summons, sustains and excites the attention, becomes the surest stimulus, both to individual effort and to the collective activity." [1]

The Numeral Frame.—In the study of arithmetic, at least at the outset, intuitive processes may be of great assistance, as when we present to the eyes of the pupil points and lines drawn on the blackboard, or when we put in the child's hands real objects, or, finally, when we make use of artificial aids like numeral frames which are used in infant schools for introducing little children to the first use of numbers. But of course intuitive calculation is but a preparation for mental calculation, and concrete intuition ought as soon as possible to give place to abstract reasoning.

Pictures and Maps.—Pictures are coming more and more to play an important part in instruction; they constitute, so to speak, an intuition of the second degree. Especially in history, nothing is more useful and interesting than pictures which represent celebrated men, monuments, and events of great importance.

In geography it is not possible to do without wall maps, or at least without an atlas; while for initiating the pupil into the primary elements of geography, we may resort to the direct intuition of varieties of surface and structure of soil.

"It is through the eyes that geography should be taught," says an authority on this subject. "To use an American phrase, the lesson in geography should be a lesson on places which would be neither less useful nor less interesting than a lesson on things."

[1] M. Gréard, *Éducation et Instruction*, p. 79.

Intuition in the Teaching of Physical Science.—In the domain of the natural sciences there are a thousand occasions for the application of intuitive processes. And in truth, in the primary school, the teaching of the physical and natural sciences ought to be almost exclusively a series of experiments. At first these experiments will be those of the laboratory, those which will require the use of physical apparatus; but appeal must also be made to less costly and less difficult experiments which nature produces every day before our very eyes: a tub of water found burst in the morning through the effect of frost; a window which closed freely yesterday but which sticks to-day in consequence of moisture; a brook which in its course bends a willow twig planted in its bed; the air (wind) weighing down the stalks of wheat or the tops of tall trees; the resistance offered by water to a stick which is moved about in it, etc.

We are far from having enumerated all the accessory processes connected with intuition. Collections of geometrical solids, the outfit of the metric system, school museums, and botanical gardens, are also the indispensable auxiliaries of object lessons and the intuitive method.

General Rules of Intuition.—The great importance of direct and indirect intuition in instruction cannot be denied; but yet we must be on our guard against making an abuse of this new method which is profitable only as we know how to use it with discretion and precaution. We know children who, having seen much, have doubtless retained much, but whose mind has been wearied and the imagination confused by presenting too many things to them. There may be excesses in intuition as there have been excesses in verbal recitation. Let us take care lest the mind of the child whom we burden with object lessons, and whose attention we

direct over thousands of images, escape from these exercises exhausted and overpowered by extreme lassitude, just as our imagination is when we have attempted to visit in a single day all the nooks and corners of a vast exposition.

Judicious and moderate, intuition ought also to be methodical and orderly. Object lessons would be only a chaos in which the mind would lose itself, if they were to go at random in the vast field which is open to them. Nothing is more useless, and, we may add, nothing more dangerous, than object lessons given without sequence and without order.

Let us not forget, moreover, that intuition, though it consists essentially in placing the child face to face with things and in leaving him, so to speak, alone in the presence of objects, — intuition is not actually separable from certain other processes of instruction. The teacher has his part in the process, not only through the choice which he makes in the objects to be placed in succession before the eyes of the child, but also through the explanations which he gives, not in the way of precise statement and didactic lesson, but by familiar conversation, by timely interruption, and also by the reflections which he provokes while questioning the pupil. In object lessons, says Herbert Spencer, it is especially the child who ought to speak; the teacher should encourage him to speak as much as possible on each object which he shows to him. But in order that the child speak, it is evident that the teacher must set him an example. Consequently intuition supposes, not only complete and well arranged collections, museums and instruments, but also a skillful teacher, accurate in his language and knowing how to associate with intuition the other processes of instruction.

Mechanical Exercises.—It is a vain wish to banish as much as possible from the school mechanical exercises, and demand that instruction shall be full of life and intelligent activity. Human nature does not tolerate a continuous tension of the active and reflective faculties. According to the profound saying of Pascal, "we are as much automatic as rational." And the great thinker added: "How few things are demonstrable! Custom makes juster and more creditable proofs; it is too much trouble to have the proofs of the truth always at hand; the automaton must be made to believe through custom."[1]

These maxims are applicable to instruction. Doubtless we should try to diffuse floods of light and intelligence over the work of the school; but do not let us flatter ourselves that we can seriously instruct the child without appealing to the automatic power of habit or custom and without resorting to mechanical exercises.

Reading and Writing. —There are, moreover, branches of instruction which necessarily suppose the prolonged repetition of certain mechanical acts in which the intelligence plays a lesser part than memory and habit. We do not purpose to return, in this place, to the different processes in use for teaching to read and write; but it is very evident that whatever effort we may make to facilitate the apprenticeship of the child, as by uniting writing with reading, or associating drawing with writing, we shall never succeed in suppressing in this part of instruction the element of mechanical routine which is necessarily involved in it. Here, more than anywhere else, the child must be constantly repeating the same operations, and, so to speak, must incessantly go and come over the same traces.

[1] Pascal, *Pensées*, Edition Havet, p. 158.

Orthography and Dictation. — In the teaching of language we should doubtless employ exercises in reading, and in oral and written work, which at the same time allow the child to develop his intelligence; but yet it is not possible to dispense entirely with literal recitations and spelling exercises where memory and habit are of more account than judgment and reasoning.

The Recitation. — In all the subjects of the course, as we have said, there are things to be learned by heart; and although we must strictly follow the rule which requires that nothing shall be learned by heart save that which has been previously explained and understood, the literal recitation of it still remains in itself a purely mechanical exercise of the memory. A given text is learned only on the condition of repeating mechanically, many times, the words which compose it.

And yet, in instruction of all grades, there is no exercise more important than recitation. I do not speak merely of rules and formulas which are properly known only on condition of having retained them word for word; but I speak also of literary recitation which is too little practiced in our schools, but which is, nevertheless, the best means of correcting and purifying the language of pupils, at the same time that it furnishes the mind with beautiful sentiments and grand thoughts.

"Since children have been found reciting and reciting, — grammar, history, geography, etc., without comprehending, memory and books have been tabooed; everything must be learned by intuition, by the judgment and the reason. If I dared give to my thought an aphoristic form, I would say to all, great and small: Comprehend, and then retain by heart all that you can."[1]

[1] E. Rendu, *Manuel de l'Enseignement Primaire.*

The Office of the Book. — If in modern instruction we recognize the necessity of making things speak before allowing the teacher to talk; and of surrounding the child with concrete realities, or at least with the pictures which, by appealing to the eye, provoke indirect intuitions, it is no less indispensable to maintain the method of instruction by books. The book remains the pupil's instrument *par excellence*, and we cannot applaud the prejudice which through reaction against a "livresque" education, goes so far as to proscribe, or at least to decry, the use of books. We must not forget that after all the purpose of primary instruction is to inspire children with a taste for reading. It would be a strange means of accomplishing this purpose to begin by suppressing all the books in the school.

But books are not merely the future instruments of personal education, and of that progressive instruction which is continued during life, instruments which we must be taught to use at an early hour, if we wish to form the habit of employing them usefully. Books are an invaluable aid to school instruction itself, and we see no way of doing without them if we wish to fix in the child's mind knowledge which is exact and durable. Besides the books of the school library, which will furnish entertaining or instructive reading that will give extension to the mind and open to it new horizons, there will also be text-books in the pupil's hands which, under different forms, such as manuals, outlines of history, elementary treatises on grammar, etc., will serve as guides and will give completeness and exactness to the oral instruction of the teacher. In the complex work of instruction there must neither be prejudice nor exclusive method. Everything should contribute to it,— the personal intuitions of the pupil, the expositions of the teacher, apparatus, and instruments; but also the

book, which, read with attention and with something of the critical spirit, is still the best instrument for intellectual emancipation and the development of knowledge.

SUMMARY.

91. We may discuss methods of teaching in two ways: we may either examine in succession, in their special processes, all the studies of the course; or we may distinguish and study one after another the essential processes applicable to all instruction.

92. These essential processes, which might be called the elements of methods, are as follows: intuition, mechanical exercises, the recitation, the study of books, the didactic lesson, interrogation, and lastly, the compositions of the pupil.

93. Belgian teachers have drawn up long lists of the fundamental processes of method. They distinguish, for example, the principles relative to the teacher, to pupils, to both teacher and pupils, to the topic of instruction, to the form of the lesson and to the succession of studies.

94. The general principle of all instruction is that there ought to be a constant coöperation between pupil and teacher; the activity of the teacher is valuable only as it provokes the corresponding activity of the pupil.

95. Intuition is an essential element of every method of instruction; it substitutes for the study of words the direct presentation of things.

96. Intuitive processes do not consist merely in exhibiting such objects as nature presents; but they resort to apparatus and to instruments which facilitate intuition.

97. School apparatus plays an important part in modern instruction. It comprises the black-board, which should be used in every subject of instruction, and also

certain devices adapted to the teaching of certain subjects of the course, such as the numeral frame, pictures, maps, physical apparatus, botanical gardens, etc.

98. Intuitive instruction ought to be temperate, discreet, methodical, and orderly; it implies, moreover, a constant intervention of the teacher, who by his explanations and questions excites and guides the intelligence of the pupil.

99. Instruction should not require a constant action of the intelligence and reflection. It supposes mechanical exercises, the child being "automatic as well as intelligent;" especially while learning to read and write, and also in exercises in orthography and dictation.

100. The recitation is also a mechanical exercise; we must learn by heart as much as possible, but on condition of having thoroughly understood it previously.

101. Books play an important part in instruction, either as instruments devised for completing and fixing the oral instruction of the teacher, or as entertaining and instructive reading lessons which extend the pupil's knowledge and liberalize his mind.

CHAPTER IX.

METHODS OF INSTRUCTION.—ORAL EXPOSITION AND INTERROGATION.

The Work of the Teacher. — In the application of the intuitive processes, or in the supervision of the mechanical exercises of which we have just spoken, the teacher is simply a guide, a stimulator of the intelligence. He intervenes only indirectly, in order to direct the work of his pupils, and to provoke thought. But the teacher has another function to perform, more active in appearance and not less important: he should, at certain times at least, and in the teaching of some subjects, present to the children, under a form simple, clear, animated, and, as far as possible, agreeable, the knowledges which constitute elementary instruction. The lecture, which was formerly in use only in superior or secondary instruction, may henceforth have a place in primary instruction. Oral or didactic exposition is one of the most powerful means at the teacher's disposal for teaching to attentive pupils what they should learn. Without doubt, the book itself is an exposition of ideas and facts. But the lecture presents all the advantages which the living, flexible discourse always has over the cold, immobile text of the book. The teacher reads in the eyes of his hearers the degree of attention and interest which they manifest, accommodates and adapts himself to his listeners, now quickens, now retards his movement, repeats himself, if he

is not understood, and finally finds, in the animation of his discourse, more persuasive accents to stir the minds and hearts of the children.

Necessity of the Lecture.—For a long time primary instruction dispensed with didactic lessons. In the schools of the Christian Brothers, the regulations condemned the teacher almost to silence. Fénelon, in his *Education of Girls*, demands that "we do as little formal lecturing as possible;" and Rousseau, going still further, says: "Give to your pupils no kind of oral lessons." It is scarcely necessary to-day to protest against these prejudices of another age, or the paradox of Rousseau. Teachers are so well convinced of the utility of the lecture that they have come to exaggerate it, and if, perchance, a criticism were addressed to any of them it would be for abusing oral exposition. It is not necessary that the school become a lecture hall where the teacher alone speaks: it should remain a class-room where all kinds of exercises alternate with the courses offered by the teacher.

But, this said, it is none the less certain that the instructor should frequently resort to oral exposition. There would be no question, as certain educators propose, of making the child discover, either by showing him the object or by using the Socratic method, all that he needs to know.

It is often necessary, instead of making him seek the truth by long, circuitous routes, to present to him, to give him, so to speak, the truth ready made. There is a direct exchange possible between the mind of the teacher and the mind of the pupil. Intuitive processes are but a means of preparing the soil, so that we may there sow in it knowledges of every kind. When we have once succeeded in awakening the attention and arousing the intelligence, it would be wrong to hold back the child in the slow route of personal

discovery; the teacher should without hesitation cause what he knows to pass from his own mind to that of his pupil.

Rules for Oral Exposition.—But this didactic instruction requires great precautions. First, we must consider that it is really in its place only in certain subjects of instruction: as history, geography, ethics, civics, elements of the physical and natural sciences. Grammar and the mathematical sciences hardly permit connected didactic lessons for the primary pupil. But historical or scientific facts and moral ideas lend themselves readily to oral exposition, which it is always necessary to accommodate to the power of attention, and to the degree of intelligence of which young pupils are capable.

Simplicity, brevity, animation, are the qualities which we would recommend above all to the primary teacher. No large, pedantic words, nor vain attempts at oratory; but familiarity, naturalness, and, above all, clearness. Although he speaks *ex cathedra*, the teacher should know how to condescend to the level of infantile intelligence, to make himself little to the little ones, to assume a conversational tone, rather than that of formal discourse, to retain of all he knows only the essential, that which is most easily understood and assimilated; finally, in depth as well as in form, by the rigorous order and connection of ideas, and by the choice of expressions, to adapt himself to the capacity of his young learners.

What is not less important is that the lessons be short. Let us not allow the exposition to degenerate into a lecture, an interminable discourse. It happens that a fluent teacher becomes intoxicated with his oratory; he is no longer qualified to judge the state of his pupil's mind; he always goes before, without doubting that he is being followed; he talks

a long time after everyone has ceased to listen. The attention of the children is held scarcely beyond fifteen minutes.

In order to hold the attention, it does not suffice to be simple, it will be necessary also to be active and animated.

There is nothing so useless as those dull and monotonous lectures which the teacher delivers in a cold and spiritless manner. It is the animation of the teacher which alone provokes the animation of the pupils: an animation, moreover, discreet and moderate, which needs neither noise nor extravagant gestures, and which, above all, proceeds from the conviction of him who teaches. Fénelon, who permitted lecturing at least in the teaching of history, said: "Enliven your narrations by a spirited and familiar style; speak to the imagination."

Rhetoric and Teaching. — Mr. Bain rightly observes that the teacher may make use of all the processes of rhetoric, of that which tends to convince the intelligence, as well as of that which seeks to move the feelings. But the English educator hastens to add that rhetoric does not supply everything that belongs to the various emergencies of teaching.

"The rhetorical arts of good exposition, by example, by contrast, by illustration, by proof, must be known to every successful teacher; but the ordering of lessons, the conducting of *viva voce* interrogations, the proportioning of oral instruction to book work, the managing of object lessons,—demand an amount of consideration that they have never yet received from any writer on rhetoric."[1]

In other terms, even oral exposition should not be an uninterrupted discourse,—it is well that it be interrupted by questions addressed to the pupils; so that even the object lesson admits of short expositions from time to time, which follow the observation of objects.

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[1] Bain's *Education as a Science*, p. 231.

Preparation of Oral Lessons. — The preparation of the oral lesson is an indispensable thing, and perhaps it is more so in proportion as the lesson is to be more simple and more elementary. A teacher who thoroughly understands what he teaches, needs but little reflection to be ready to speak to an audience of adults or mature men, to whom he may speak unreservedly, communicating to them his whole thought. But the teacher who has to limit himself, who, by reason of the age of his pupils and even of the limits of his programme has continually to be inspired by the maxim, "To teach is to select," should not trust himself to the hazards of improvisation. It is necessary that, in a well defined plan, he have fixed in advance bounds which he will not overstep, and have determined the essential points which he desires to emphasize. We do not demand that he have prepared the expression, the form of his exposition; but the order and sequence of the ideas should be carefully premeditated. It is only in the details of a previously determined outline that extemporaneous effort may be allowed.

"For lack of preparation," says M. Marion, "talking in school falls easily into the most inferior type, arid and prolix in turn, uncertain and confused, empty when it attempts to be light, drawling when it attempts to be deep. With rare exceptions, it quickly begets inattention and fatigue, and dissipates the mind. In order to miss no opportunity, we must think in advance of the occasions which we shall have for arousing mind, the means which may offer themselves for stimulating curiosity, exciting interest, and enlisting the whole class in the work. We should study especially the order in which the ideas may be made clearest and in which they should be connected to correspond to the true relations of things."[1]

[1] *Revue Pédagogique*, Jan., 1888. Article by M. Marion, on the *Règles fundamentales de l'enseignement liberal*, p. 18.

Excess to be Avoided.—The preparation of the lesson should be, consequently, a sort of plan of campaign in which the teacher foresees the difficulties to be overcome, and regulates the general course to be followed, rather than a determination too detailed of the form to be employed or of the turn to be given to the expression of the ideas. Lessons too minutely prepared are wanting in that freedom of manner and that ease which should characterize instruction.

"A preparation too minute," says M. Marion again, "is by no means desirable: a mistake has been made in omitting this in advice to teachers. It detracts from the flexibility of the lesson, which runs the risk of falling into a monologue; it produces a certain didactic stiffness, destroys spontaneity, and forestalls the inspiration of the moment. We become more or less enslaved by a preparation which foresees and determines everything, both form and matter. We value that which has cost so much trouble, we hold to it, we repeat it. In this way there is introduced into the school the stereotyped lesson, and inertia of both teacher and pupil."

Preparation of School Work.—It is not merely the oral lesson, but all the exercises of the school, that the teacher should carefully prepare. I do not speak simply of the immediate preparation of the work of each day; I mean also the preparation, long in advance, of the work of the entire year. It is necessary that from the first day of school the teacher should have made a complete survey of the general distribution of materials, of the development which should be given to each part of the programme, without which he would run the risk of dwelling too long on one point, and then having to pass too rapidly over some other, of not duly proportioning to each exercise the part which belongs to it, and of not reaching the end of his task.

But what is no less necessary is the regulation, day by day, of the successive exercises of the school. He must select in advance his texts and his subjects for composition; he must ask himself what difficulties will be presented by the selection which is to be read; and must reflect in order to know what applications are most suitable, etc. Hence the utility of a school-journal, which is the *résumé* of this daily preparation. Will any one say that this preparation hampers the free activity of the mind? We answer with M. Gréard, that it leaves to instruction the element of improvisation, we may say almost of surprise, which is its charm; but that it assures its general direction, determines its end, and prevents digressions from it.

The Interrogative Process. — Instruction does not proceed alone by didactic lectures, by uninterrupted exposition. The interrogative form is also a process of instruction.

There are, moreover, to be distinguished different manners of questioning. The teacher may ask questions simply to assure himself that the pupil has retained what he has learned. The question is then but an auxiliary of other methods of instruction. Again, the teacher questions his pupil on subjects which he has never yet studied; he stimulates, either his observation of objects within the reach of his senses, or his reflection on questions which, in order to be solved, require merely judgment and reason. In this case, interrogation, which, from answer to answer, conducts the child to the solution of the problem, to the acquisition of new knowledge, is a separate method which has its own principles, its distinct end, and which is called the Socratic method, if we consider the name of the first teacher who employed it, or the inventive or heuristic, if we consider its character, which is the discovery of truth.

The Socratic Method.—The form of the Socratic method is interrogation; the matter is an appeal to the personal thought of the pupil, the excitation of minds supposed to be capable of discovering truth for themselves. At first thought, the Socratic method appears to be the ideal method of instruction, since it calls into play at once the activity of the teacher and the pupil, and excites more than any other, the initiative and the inventive faculties of the student.

This is how Socrates applied it to moral truths and to those questions which may be solved by the mere analysis of ideas and words. Every truth, said he, contains other truths, every error is united with other errors. It will always be possible, then, to cause a mind to discover, according as we solicit it by our questions, 1st, the truths which are identical with a truth which he has already recognized; 2d, the graver errors contained in an error which, less easy to discern, had slipped into his judgment. In truth, it is then a process of reasoning: the teacher causes his pupil to reason with him; he makes him successively give his assent to principles which he establishes and to consequences which he deduces.

What is to-day called the Socratic method is more properly the dialectic of Greek philosophy, an abstract operation which causes to be grasped the relations of ideas and propositions. Modern educators, however, tend to make it intervene in the data of the senses. They employ the same process of interrogation in order to call the attention of the child to the sensible qualities of an object which he has seen, but of which he has not, in his first confused and partially unconscious perception, analyzed all the characteristics.

Limits of the Socratic Method.—The Socratic method, whatever may be its merits, has its grave defects. It solicits

presence of mind, accustoms to rapid conceptions and prompt utterance, and exercises the child in thinking and speaking. But, with all that, it does it with too great celerity, so to speak; it is the instrument of an improvised instruction, of a superficial dialectic, not of a profound study. It could not present the advantages, either of studied, skillful lectures, in which the teacher condenses into a few words the résumé of his long reflections, or of personal studies and prolonged meditations, in which the pupil quietly collects his teacher's best thoughts.

Besides, the Socratic method may be successfully applied only in the domain of things in which the mind discovers the truth by itself, and this domain is very narrow.

"Insufficient by its form, the Socratic method," says M. Marion, "is even more so as to its matter. It supposes that the truth is innate in the mind and the object is to draw it out. A profound thought, so far as primary ideas, the fundamental principles of knowledge and of morals, and perhaps also the strictly formal truths of geometry, are concerned; but what does it become when the object is to beget acquaintance with the real world, that which is, first of all, the end of study? Question the child as much as you will, you will not make him find in his own mind physics, geography, and drawing; you will not cause him to find a correct idea of the relations of things. The true thought is the exact correspondence of ideas to objects; and vain is the pretension of leading the child to it by making him draw every thing from himself. If his mind is not altogether a *tabula rasa*, it is still less a cyclopædia. When even the philosopher, in order to think to some purpose and not to lose himself, needs to touch the earth, to ground continually his meditations and deductions on experience, how shall the child, who has everything to learn, draw from his mind what has never yet been put into it? The mind enriches itself profitably only by the observation of facts, by contact with things. In other terms, instruction sup-

poses, in order to be solid, a strong dose of realism, while the Socratic method is adapted to the purest formalism." [1]

As practiced by Socrates himself, the interrogative method was often only a long and subtle babble, an abstract dialectic which sported in space and disciplined the mind more than it nourished it.

It is necessary, then, not to be deceived as to the power of this method, without considering the fact that, to be utilized, it demands a hand peculiarly deft and practiced, something of the ingenuity and subtlety of spirit of a Socrates.

Wholly different is the nature of interrogation in its ordinary sense, understood as an auxiliary means of didactic instruction.

Interrogation in its Ordinary Sense.—Interrogation is at least the best means of assuring one's self that the exposition has been comprehended, that the essential points have been retained. Under the old system, the pupil was made to recite; under the new, he is interrogated; so that we appeal less to his memory than to his intelligence; we give him the opportunity of expressing in his own way the knowledge which has been imparted to him, so that interrogation is at once a means of control for the teacher, and for the pupil an occasion of making effort, so as to translate his thoughts into new forms.

Even when the answers are not satisfactory, interrogation is useful.

"These answers," as M. Joly observes, "reveal in the infantile intelligence false ideas, erroneous interpretations, and dangerous

[1] *Revue Pédagogique*, Jan., 1888, M. Marion, on the *Méthode Active*.

tendencies which may be enveloped there in his ignorance. When they appear and betray themselves by artless answers, we are prepared to correct them. The comparison which the pupil does not fail to make between his awkwardly constructed answer and that which the teacher substitutes for it, in explaining it to him, is one of the most profitable lessons that he can receive." [1]

Different Kinds of Interrogation.—The questioning may immediately follow the teacher's exposition; it permits him then to return to certain important or obscure ideas, to repair omissions, fill up breaks, add explanations and illustrations which serve to make his instruction pointed.

It may also intervene even in the course of the lesson, in order to awaken attention when it is flagging, to keep alive the interest of the class.

It is, in short, necessary for controlling the individual work of the pupil, for recalling to the class the lessons of the day before and of preceding days, and, finally, as an instrument of perpetual revision.

Advice Concerning Interrogation.—Here is some advice on the practice of interrogation, which we gather from the *Notes of an Inspector*, by M. Anthoine.[2]

"You have been advised to interrogate; and now you interrogate too much. You have asked Mary a question, and, as she was slow to answer, you passed it to Bertha, to Jennie, and as Jennie did not answer it as completely as you desired, you have asked another, and then another, and have ended by answering it yourself. Either the question was too difficult, and it had been better not to propose it, or you should have pressed farther the pupil whom you had at first questioned. Do not let the questions fly continually in all directions; but let them assume position and

[1] H. Joly, *Notions de pédagogie*, p. 120.

[2] M. E. Anthoine, *À Travers Nos Écoles*, Paris, 1887, p. 6.

remain fixed for a time in one place. There are many ways of questioning. Listen to the teacher who, in an infant class, is giving an object lesson; she stops her exposition, addresses a pupil, questions him concerning something which he knows, and which she is well aware that he knows. Such questioning is purely formal, and is only a way of interrupting the exposition and of relieving the child of a passive rôle, which would not be suited very long to his active nature.

"Even with young pupils, there is in the course of the exposition a sudden, brusque questioning, a means of regaining the minds of the class, a sort of call to attention, a warning thrown out to the pupil that he should always listen, because he may be called upon at any moment. There is, after the lesson, the questioning by which we seek to assure ourselves that we have been heard, or rather that we have been comprehended."

What should no longer be forgotten is, that the questions themselves should be prepared. If we do not know in advance what direction we shall give to our questions, we run the risk of allowing ourselves to be turned aside by the unexpected suggestions of the answers; we fall into confusion and disorder.

Under another form, interrogation should obey, as well as didactic exposition, the general rules of method, and proceed, either by rigorous deduction or by prudent induction.

SUMMARY.

102. The teacher intervenes in all the exercises of the school in order to regulate the work of the pupil; but he plays a more active part still in oral exposition, in the lecture.

103. The didactic lesson which formerly was in use only in secondary or higher instruction, to-day has its place in primary instruction.

104. The oral lesson has over other processes of instruction this advantage, that, instead of making the child

seek truth by long, circuitous routes, it presents or gives it to him ready made.

105. Oral exposition is especially adapted to the teaching of history, morals, the physical and natural sciences. It should, moreover, be simple, familiar, short and animated.

106. The processes of rhetoric may be discreetly employed in instruction.

107. The more simple and elementary the lesson is to be, the more necessary it is that it should be prepared with care; that is to say, that the order of the ideas, the development to be given to each part, should be fixed in advance, but it is not necessary that the teacher prepare too carefully its external form.

108. It is not the oral lesson merely, but all the work of the school, that the teacher should prepare with care; hence the utility of the school-journal.

109. The interrogative form is also a process of instruction.

110. There are two principal kinds of questions: 1. Questions whose aim is simply to give assurance that the pupil has retained and that he has understood what has already been taught him; 2. Questions which bear on subjects which the child has not yet studied, and which provoke his personal thought.

111. Under this second form, the questions constitute the inventive or Socratic method; a method which may be applied only in the very narrow domain of truths which the mind discovers by itself.

112. Furthermore, the Socratic method runs a great risk of becoming a subtle verbiage, a dialectic of pure form, which disciplines the mind more than it nourishes it.

113. Interrogation, in its ordinary sense, is a means of control which gives the teacher further opportunity of completing his lessons.

CHAPTER X.

METHODS OF INSTRUCTION.—THE PERSONAL WORK OF THE PUPIL.

The Work of the Pupil.—All the work of the teacher has but one purpose—to make the pupil work. The most skillful lessons would be to no purpose if the pupil does not first give them his sustained attention, if he is not then granted an opportunity to give an account of them, after having heard them, and if he is not obliged, by personal effort, to draw from them the applications which they permit, either in oral exercises or in written tasks.

We know schools where a competent and active teacher exerts himself without respite, multiplies his efforts, and talks without stint; and all this without obtaining positive results. This is because he does not know how to interest his pupils sufficiently in the work of the school; because he does not require of them sufficient effort in real reflection, which can alone assure intellectual progress; because he does not impose on them to a proper extent the personal tasks which require the pupil really to assimilate what has been taught him.

Fénelon was wrong when he wished that the teacher should refrain from requiring the child to repeat a lesson after it had once been given. This might annoy him, he said. However disposed we may be to make instruction attractive and easy, it should deign at times to constrain the child and make him weary. By attempting to keep him in

good humor all the time, and to spare him all effort, we run the risk of making him weak, of spoiling him, of inducing the habit of a lazy carelessness, and, finally, of making him learn only by halves and even not at all what he ought to learn perfectly and with absolute exactness.

Different School Exercises.—The instruction of the teacher has therefore a necessary counterpart, the effort of the pupil. This effort is produced particularly in different exercises which are marked on the school programmes, in which are enumerated in the following order: 1. oral exercises; 2. memory exercises; 3. written exercises; 4. exercises in analysis. These exercises, which we shall pass in review one after another, have no value save as they are mutually complementary. The exercises in analysis develop more particularly the judgment; and the exercises in recitation, the memory. It is in combining the different results of these particular efforts that teacher and pupils will attain their purposes.

Variety of Exercises.—Even at the outset, and in the elementary course, it is necessary to know how to vary and alternate these exercises. Those were dismal class-rooms where, in the olden time, reading and writing alone absorbed the child's attention to the exclusion of every other study. Before he is able to read perfectly, the child is already able to do some profitable work in number and to study a little of geography and history. This mingling of exercises, far from wearying the mind, brings it support; for there is no relief from work like work of another sort.

Besides, this variety of exercises is necessary in order to test the different aptitudes of children. A given pupil whom the mechanical exercises of reading and writing, if

they were the only ones, would perhaps have disgusted forever, is attracted and won over to study by an exercise in geography or a course in history. It is well for the teacher from the very start to sound, so to speak, the mind of his pupil on different sides, in order to discover the ways through which his instruction has the best chance to seize and captivate his attention. "A breach once made," says M. Gréard, "all the rest will follow. There are but few minds which have not their way of approach, and the most often, it must be acknowledged, it is not the child who is at fault, but the teacher. To multiply judiciously the means of approach is to multiply the means of success."

Gradation of Exercises.—In methods of instruction there is no question more delicate than that of the gradation of exercises, of the assignment of studies to the different courses in such a way as to adapt them to the age and intellectual development of pupils. The programme, no doubt, governs the distribution of subjects and even determines the nature of the exercises suitable for the elementary, intermediate, and higher courses, but there still remains a wide field for the teacher's discretion in the choice of the particular duties and tasks of all sorts which he is to set before his pupils. In addition to the text of the programmes which the teacher is never to lose sight of, because it is an excellent guide, it is well for him to reflect on the plan which is best to follow, and on what should be the spirit of his instruction in addition to the letter of the official requirements. The following observations of M. Gréard on the sequence of the three courses suggest useful reflections.

He remarks, in the first place, that the three courses, the three grand divisions of the school organization, are closely

connected with each other; that the primary grade, being an instruction in principles or elements, it is necessary for the child to be ever recurring to the same studies; that the developments of the different courses may overlay one another, and the exercises connected with them may advance one step at each course, while the substance of the lesson remains the same. Hence, the concentric character of the three successive courses of the primary school.

Proper Character of each Course.—But though the three courses are but the progressive development of the same lessons and the same exercises, they each have their proper character.

"The elementary course," says M. Gréard, "is a preparatory course. The purpose of the intermediate course is to form the basis or groundwork of knowledge. It will familiarize the child with the use of language and number, will establish in his mind the frame-work of the generating facts of national history and the broad lines of the physical, political, industrial, and commercial geography of France and the entire world — will endow him, in a word, with that body of positive notions without which the man of to-day finds himself without the pale of humanity.

"With the higher course, the instruction takes an upward start. The age has come when, after having learned to proceed from the application to the rule, from the fact to the principle, the child can be accustomed to descend logically from the principle to the fact, from the rule to the application; and all this without ambitious theories, but in such a way as to connect the more or less scattered elements of the preceding exercises with the general ideas which are their explanation and which form their bond of union."

This is equivalent to saying that in the higher course the deductive method may be substituted for the inductive method, and that there is no longer any difficulty in pre-

senting to the child principles and rules before facts and applications.

Oral Exercises.—Great importance must be attached to oral exercises, and they ought to precede all the others. We have a poor opinion of the schools where the teacher does all the talking. The pupil must talk in his turn, not only as he responds to a series of interrogations, but also as he takes part in the particular exercises which the programme has sharply defined for the three courses.

Elementary Course.—*Oral reproduction of short phrases read and explained, then of selections or parts of selections made by the teacher.*

Intermediate Course.—*Reproduction of recitations made viva voce; summary of selections read in class.*

Higher Course.—*Abstract of readings, lectures, promenades, experiments. Viva voce explanation by the pupil of an historical or literary selection which he has been appointed to read and analyze.*

At first, in order to develop, little by little, the pupil's facility in speaking, he is restricted to repeating, almost literally, sentences which have been read or explained to him; then, insensibly, greater freedom will be granted to him, and he will be required to make an effort at personal originality in the thought and its expression.

But oral exercises comprise more than the exercises in elocution of which we have just spoken; reading with comments is also an oral exercise.

Reading with Comments.—Reading with comments has become one of the principal exercises of the primary schools. Doubtless, the teacher plays the principal part in this exer-

cise, since it is he who must take account of the difficulties presented by the words and the ideas in the text under consideration. But yet we must not think that the pupil is to participate in this exercise only passively, contenting himself with reading the given selection, or at most with lending an attentive ear to the teacher's explanations. The thing of most importance is to teach pupils to find for themselves, at least in part, the commentaries suggested by the reading lesson, and by their questions to draw out the teacher's illustrations.

Says Léon Robert: "Never impose the explanation which you have found. On the contrary, do your best to suggest original ones. There is more than one way of commenting the text, because truth has more than one aspect. What your pupil says differs from what you would have said, and his explanation may be as good as your own; it is even better for him, because it is his own."[1]

In conclusion, the pupils must be constantly associated with the teacher's efforts, and the reading lesson must become a collective exercise to which each contributes his part.

Memory Exercises. — In truth, every study is a memory exercise, but yet it is well to make a special place for exercises in recitation proper, which the official programme designates as follows: in the elementary course, the recitation of poems of a very simple kind; in the intermediate course, the recitation of fables, short poems, and a few prose extracts; in the higher course, the expressive recitation of choice selections in prose and verse, of dialogues, and of scenes borrowed from the classics.

It is not enough to have pupils read the master-pieces

[1] *Revue Pédagogique*, April 15, 1889, p. 338.

of our literature. They must be required to learn selections from them by heart; and must be trained to an expressive recitation, or at least to an exact and correct pronunciation.

Written Exercises. — Without dispute, written exercises are the most important of all. I am well aware that latterly there is a sort of violent reaction against the abuse which has been made in certain schools, of paper, ink, and pen. It is not necessary to force the pupil to write and to write continually; but while proscribing the over-use of written exercises, it is just to maintain and recommend their proper use. The subjects of instruction are not fixed in the mind in a durable way, and original ideas have not a chance to express themselves, save when we have the pen in hand; this is necessary even while the teacher is giving his oral lesson.

The Art of Taking Notes. — In fact, as dictated lessons are no longer in vogue, and as the book and the manual no longer monopolize instruction, the art of taking notes during the progress of the lesson has acquired a great importance. The pupil cannot intrust to his memory alone the exposition of his teacher. He must catch on the wing, and fix upon paper, the essential facts and principal ideas, in order subsequently to arrange or edit these notes, or rather, if the pupil be spared those long redactions which once consumed too much of his time, to preserve the plan of the lesson, and to be able afterward to find and re-read what has been written in class. Here is a wholly new art, the art of taking notes.

"Well taken notes are precisely those into which light and order have already been introduced, those which can be used without being subjected to previous correction. The work of choosing and classifying was accomplished during the lesson

itself. . . . . There are three essential things to be considered: 1st, the choice to be made in the ideas; 2d, the arrangement of these thoughts; 3d, their expression."[1]

Home Tasks.—But the pupil ought not merely to write while the lessons are in progress; he ought also to devote himself to personal work either at home or during school hours.

Too much has sometimes been required of the pupil in the way of home tasks, and on this point we may observe in certain schools some tendency to extremes. Moreover, it must be acknowledged that in most families which send their children to the primary school the conditions of life hardly permit work at home, at least written work. It has been justly said that the oral lessons to be studied are the tasks which may the more properly be done at home. We do not think, however, that the teacher ought absolutely to forbear to prolong the work of the school-room by requiring the pupil to bring to him from home, either some maps in outline, the solution of a few problems, or even some exercises in redaction.

But there must be an absolute proscription of written tasks which are purely mechanical, which occupy the fingers without exercising the mind, and which are nothing more than long and painful compositions. The same advice applies of course to all tasks, to those at school as well as to those at home.

"In all grades of primary schools," says M. Gréard, "we must proscribe artificial or conventional tasks,—whatever occupies the child without instructing him, whatever perverts his will and stunts his intelligence, by constraining him to a sterile application."

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[1] *Revue Pédagogique*, January 15, 1883, p. 40.

It is especially in the class-room that the teacher may require written tasks. We shall speak only of those which seem to us to be the most interesting: problems, on the one hand, and exercises in composition and style, on the other.

Problems.—We have particularly in mind arithmetical problems, as it is only very rarely that problems in geometry, algebra, and physics, can be employed in primary instruction. Whether the teacher borrows them from an educational journal or from a printed collection, or, what is much better, whether he constructs them himself, the problems should be chosen in such a way as to train the pupil's faculties of reflection, judgment, and reasoning, and also to teach him to calculate rapidly and easily the practical questions which he will have to solve in his career as a workman or farm-laborer.

This is what the official instructions require for the normal schools, and for a still better reason, for the primary schools:

"The teacher will carefully avoid turning aside from primary instruction and treating questions of a purely speculative character. He should restrict himself, in accordance with the programme, to the theories which give rise to practical applications, or that are necessary for the connection of propositions and the rigor of demonstrations. Finally, he will multiply exercises and problems, taking care to choose them exclusively among those which have reference to daily life, to commerce, to industry, to the arts, and to agriculture."

Exercises in Composition. — Evidently, it is not proposed in primary schools to educate writers, but merely, as M. Gréard has very clearly said, to put the pupil in a condition to think by writing, and to express an accurate idea in an accurate form.

Exercises in invention and composition ought then to be of the simplest, and graded with minute care. At first, the pupil will be required to reproduce on the black-board, on his slate, or in his note-book, a few sentences previously explained. Then, by appealing to what he recollects of his reading, or of his little experiences, he will be gently led to compose sentences and write simple propositions of his own. Later, he will be required to reproduce in his own way, no longer literally, selections read in class or at home, or *viva voce* recitations made by the teacher. At the same time there will be proposed to him exercises in redaction on objects, the simplest and best known to him. Finally, in the grading of these written exercises the same rules will be followed as in the development of the oral exercises. At first, the literal reproduction of what has been read or heard was sufficient; but afterwards, within narrow limits, free play will be given to the pupil's imagination and personal invention.

Possibility of these Exercises in the Primary Schools.— But all are not yet agreed that the child in the primary school can be introduced to exercises in composition. It is, therefore, with pleasure that we invoke the authority of M. Gréard on this point:

"Reading," says he, "merely collects the elements of thought and language. In order that these elements may be turned to the use of the mind and the heart, they must be assimilated. It is here that the exercise of redaction intervenes. This is the term given to the kind of exercise by which the child is called to express his ideas. Formerly there was given to this process, as is still done in boarding schools for girls, the false and ridiculous name of *style*. The word redaction itself seems to us too pretentious, and we would substitute for it a term bearing greater resemblance to the thing, simpler and truer, that of exercise in inven-

tion and composition. Such, in fact, is the idea attached to the word redaction which the pupil usually comes into practical contact with only in the higher course; and for the same reason subjects for this process are sought in remote quarters. What follows? If it is a question of facts which the child has learned, he recites them on the paper; if his memory furnishes him nothing, not knowing what shift to make, he attempts to put on their feet in one way or another a few common-place phrases. It is not the pupil who must be blamed for this failure. Usually the exercise is badly conducted. Ideas do not spontaneously occur to the pupil's mind, and he must be taught to find them. Still less do they of themselves take the order and form in which they should clothe themselves; the pupil must be taught to compose. Now, it is at a very early age that this little apprenticeship can be undertaken with advantage. However young he may be, the child is capable of creating the examples by means of which he is to be led to understand the nature and use of words and language; he has in his mind simple propositions ready made; he possesses them unconsciously, but he possesses them; his plays and the objects which surround him are constantly furnishing him with materials for them; all he asks is to express them. The only thing that is then necessary, while stimulating this natural faculty, is to see to it that he always expresses himself correctly."[1]

And M. Gréard clearly points out what should be a progressive course in these exercises; the child at first should be made to invent simple propositions, then complex propositions, and finally the connection of these propositions. Later will come the written development, the resources of the child's vocabulary being extended, as well as those of his mind. The fundamental conception or plan will be furnished by the teacher in a few sentences; and the work of the child will consist in filling this outline by indicating the causes, effects, and accessory circumstances of time and

[1] Gréard, *Éducation et Instruction*, p. 94.

place. Finally, we shall come to the subjects of composition proper, those in which the pupil will have to take everything out of his own resources.

Correction of Compositions.—There is not a single part of instruction—we can not repeat it too often—which does not require the coöperation of teacher and pupil. Compositions, though properly the pupil's own work, would be of little value if they were not corrected with care. The teacher, who intervened on the start in the choice of subjects, is afterwards to intervene through the scrupulous attention which he gives to the work of his pupils. A well written composition is, no doubt, of itself profitable to the pupil; but how much more profitable it will become if the teacher is careful to point out to him its deficiencies and imperfections, not only to show him its faults, but especially to explain them, and to teach him how he may do better another time! The teacher can not be too strongly recommended to revise all the copies of his pupil and annotate them, outside of school hours. This will not prevent him from making a correction before the whole class, on the black-board. The pupil, thus knowing what minute correction awaits him, will work with more zeal, and the greater the certainty that his compositions will be corrected, the less the need will be of such correction.

Let us add that the programme properly recommends the use of a process which has its utility if practiced with intelligence—the mutual correction of written exercises and compositions by pupils themselves.

Exercises in Analysis.—The programme distinguishes as a distinct class, exercises in analysis, though these are sometimes oral exercises, and sometimes written, but are connected exclusively with the study of grammar. It is

properly required that grammatical analysis, employed only in the elementary course, should be chiefly oral and rarely written. As to logical analysis, which is not required in the elementary course, only oral exercises should be employed in the intermediate and higher courses.

The advantage of oral analysis is evident; for in this way we are more certain of holding the pupil's attention, of furnishing him the necessary explanations which the case demands, and of shunning the dryness of an exercise which in itself is somewhat difficult.

In special articles[1] will be found an indication of the different methods or processes which may be employed in written analysis. The only thing important for us to observe is that useless writing should be avoided as far as possible, such as the fastidious repetition of the same formulas; and we should recollect, as it has been said, that "analysis ought to be considered above everything else as a precious mental gymnastic."

Conclusion.—We have now reached the term of our reflections on intellectual education and methods of instruction, but we are far from having exhausted the subject. That which reassures us for the deficiencies of a work so necessarily limited is the fact that the theoretical or analytical study of educational methods is not the thing of most importance to the teacher. Methods in pedagogy are somewhat like Constitutions in politics. Both are valuable chiefly through the worth of the men who are called to apply them. Doubtless, this is no reason for doing without methods or Constitutions; but it is none the less true that success in teaching depends chiefly on the worth of those to whom it is entrusted.

[1] See *Dictionnaire de Pédagogie*, article ANALYSIS.

SUMMARY.

114. The work of the teacher has for a necessary counterpart the work of the pupil. All the efforts of the instructor will remain fruitless unless they provoke a corresponding effort on the part of the pupil.

115. The effort of the pupil will be especially called forth in the following series of exercises: 1, oral exercises; 2, exercises in recitation; 3, written exercises; 4, exercises in analysis.

116. From the very beginning of instruction there must be a variation and alternation of studies for the sake of calling into play the different aptitudes of the pupil and of finding the different modes of approach to his mind.

117. The teacher should adapt the exercises to the age and degree of intellectual development of his pupils, and distribute them in the different courses according to the rules of a rigorous gradation.

118. The three courses are but the development of the same lessons and exercises in a concentric order; each course however has its own individuality.

119. Oral exercises ought to precede written exercises; it is essential that the teacher do not do all the talking, but that he make his pupil take his turn in speaking.

120. Although the teacher plays the principal part in explaining the reading lesson, the pupil should have an opportunity to express his personal reflections.

121. Memory exercises do not tend merely to develop the memory; they should be an occasion for requiring of the child a correct pronunciation and an expressive delivery.

122. Written exercises are the most important of all.

123. The pupil must be trained in taking notes during the teacher's lecture.

124. He must then be required to perform certain tasks either at home or at school; but purely mechanical duties which train the fingers more than the mind should be absolutely proscribed.

125. Problems and exercises in redaction are among the most important written exercises.

126. In the choice of problems we should care less for questions of a purely theoretical value than for practical questions which find their application in daily life.

127. Exercises in redaction should be carefully graduated; the sole purpose is to teach the child to express accurate ideas in an accurate form.

128. The most highly finished compositions will yield the pupil only half their value unless they are corrected by the teacher.

129. Exercises in analysis should be chiefly oral, and should be considered as an intellectual gymnastic.

C.—MORAL EDUCATION.

CHAPTER XI.

NATURAL DIVERSITY OF INSTINCTS AND DISPOSITIONS. MODIFICATION OF DISPOSITIONS AND FORMATION OF HABITS.

Moral Education. — "To the intellectual culture which forms the mind," says M. Gréard, "there should be united the moral culture which forms the character." The child does not go to school merely to be instructed there, but also to become better, to contract virtuous habits, and to be more and more inclined to the practice of the good.

It is not even saying enough to put moral education and intellectual education on the same plane. The truth is that moral education is the higher aim. The immediate results of school apprenticeship, for example the approaching preparation for graduation, must not diminish in the eyes of the teacher the higher importance of the pursuit of moral qualities which doubtless cannot be estimated in an examination, but which will be put to the test during the whole course of life, and which, according to their character, will assure or will compromise the happiness of one's entire existence. Surely a man is worth less for his knowledge than for his character, and the school will have done more for its pupils by furnishing them, in the measure of its ability, with good moral habits, than by giving extension to their knowledge.

Opinion of Educators.—Such is indeed the opinion, not merely of the greater number of educators, but, it may be affirmed, of all of them.

"Instruction," said Locke, "is but the least part of education." "What a father should desire for his son," he says again, "is virtue before everything else, knowledge occupies but the second place."

Montaigne was certainly of the same opinion when he required of his ideal preceptor two principal qualities, "but morals more than understanding."

The moderns are not less emphatic. If Horace Mann proclaims that the school is the greatest discovery ever made by humanity, it is because he expects of it grand moral lessons for all men.

The other social organizations, he says in substance, have for their purpose the cure of our ills, but the school is a preventive. . . . . Let the schools be multiplied and acquire all their efficiency, and nine-tenths of the articles of the code will have no reason for their existence; the long catalogue of human ills will be shortened; there will be greater security by day, and sleep will be more secure by night; property, life, and reputation will be better secured; and all reasonable hopes more radiant.

So also, as the German educator Diesterweg remarks, Pestalozzi's ideal was education, not instruction. It is true that in his eyes all instruction had an educating power; and Diesterweg himself declares that the value of man resides in his heart.

Moral Education in the Common School.—But it is useless to multiply quotations to confirm the hackneyed truth which is each day gaining ascendency through the conditions of larger liberty enjoyed by men in modern society. In pro-

portion as the citizens of a democracy are granted the use of larger liberties, and as the fuller development of their rights places in their hands the government of their lives and the voluntary performance of their duties, it becomes more and more necessary that each individual contain within himself the principles of morality, the check to his passions, and the elements of a moral personality armed with all the ideas and with all the energies which assure the accomplishment of duty.

Doubtless it belongs mainly to the family to sow in the mind of the child the seeds of morality. "The family has precedence of the school by the priority, continuity and duration of its action." But the school can also contribute towards laying the foundations of morality.

This is not merely because the school teaches morality, for the teaching of morals gives us a knowledge of our duties rather than communicates the power necessary for practicing them; but because in all the school exercises, in all the lessons of the teacher, and in all the actions of the pupil, there is nothing which, with skill, may not be made to converge towards moral education and utilized for the formation of habits and the culture of the feelings and the will.

Moral Authority of the Teacher. — But in order that the school may exercise this educative virtue, it is necessary as a prime and indispensable condition that the teacher know how to make himself loved and respected, that he be an example of moral qualities, and that he have a large authority over the mind and heart of his pupils.

Experience shows that this authority may be acquired, and we wish to quote no other proof of this than the following fact:

"In the village of V——, a child who was being severely punished by his father for a trifling fault was heard to cry, 'Oh!

if my teacher only knew it!' And the father, it is said, staid his uplifted hand. Thus in his distress the thought of the child turned at once toward his teacher; he appealed to him, as to justice itself, and the name invoked caused the father to reflect and thus disarmed him! What more beautiful homage could be rendered a man! What finer example of moral authority! When I meet such a teacher in the humblest village, I bow before him with respect."[1]

Let us hope that there are many such teachers, not to offset the waning authority of the family, a thing merely exceptional, and an exception to be regretted, but in order to unite their own authority with that of the father and the mother. In this way the cause of education will be gained at the school.

Education, Intellectual and Moral.—Intellectual education is in itself a preparation for moral education. The substantial qualities of the intelligence, judgment, and reflection, are the best supports for the unfolding of the moral qualities. When one has learned to govern his attention, he is in a better condition to control his instincts and his passions; and when one knows how to direct his mind, he is very near having the power to direct his will. Good methods of instruction are at the same time instruments of moral perfection.

"Exactness, which is the dominant character of good methods, becomes a moral feeling as well as a quality of mind. To render to ourselves an account of what we know accustoms us to weigh and regulate our conduct; and not to be content with imperfect knowledge, naturally leads us to judge severely of our actions."[2]

On the other hand, instruction itself may be a great

[1] Anthoine, *À travers nos écoles*, p. 18.
[2] Cochin, *Pestalozzi*.

aid to education. I do not speak merely of direct moral lessons which have their undoubted utility, it being well said by the ancients that "virtue can be taught;" but there is no instruction whatever, grammatical or historical, there is no school exercise which a skillful teacher may not employ to the advantage of moral education through the choice of examples by which he illustrates the rules of grammar, through the reflections suggested to him by his lessons in reading and history, and through the nature of the subjects for composition which he assigns to his pupils.

Essential Elements of Moral Education. — It is nevertheless true that neither the lessons of a course in morals, nor the indirect influence of the different subjects of instruction, suffice for moral education. There is a special education in morality whose essential elements, which we shall examine one after another, are as follows: 1. The study of instincts and dispositions; 2, the formation of habits; 3, the culture of the feelings; 4, the education of the will; 5, discipline.

Different Meanings of the Word Character or Disposition. —The first duty of the teacher is to take account of the instincts and dispositions of his pupils. For the moment we are not concerned with character understood as the synonym of energy of will, but simply with character taken in its large sense as defined by Littré, "that which in morals distinguishes one person from another." Thus understood, characters or dispositions are the inclinations, natural or acquired, which give to each individual his own physiognomy.

Character in the Child. — In the adult, character is composed of whatever the acquired habits have added to the

natural gifts and innate qualities of temperament in the way of new dispositions. In the child, before education has accomplished its work, character is scarcely more than the aggregate of individual and hereditary instincts. By reason of the surroundings where the child has passed his earliest years, and of the conditions of his life in the family, it is rare that any influences have been able slightly to modify the primitive basis of his intellectual and moral temperament. The child comes to school before he has had the time to contract inveterate habits, without having taken his bent, and so offers to the teacher's efforts matter that is plastic and most often docile. Nothing is more difficult than to modify the definitively formed character and finished nature of a man already advanced in years. But the nearer we approach the beginning of life, the sooner we undertake the work of moral education, the less resistance we shall meet and the less we shall have to strive for the amelioration of character.

Diversity of Instincts and Dispositions. — But natural inclinations, in connection with the first impressions received in the family, are sufficient to establish marked differences among children. M. Joly has sketched these in outline as follows:

"The character of a child admits of many shades. One has a *happy* disposition, that is, his health is so good, his temperament so even, his natural imagination so vivid, but so strongly inclined to represent things on their good side, that his tendency to cheerfulness and good humor are almost constant. He is pleased with whatever is given him; he makes the best of everything; he resigns himself without bitterness and without discouragement to his little annoyances; and though not insensible to the misfortunes of others, they give him no long disturbance.

"A *good* disposition and a happy disposition are very much alike. Sometimes, however, we seem to place between the two this shade which distinguishes the disposition to play and feel happy at slight cost, from a disposition of habitual goodness towards others. A good disposition diffuses pleasure, willingly divides with play-fellows, quickly forgets the little offenses or the little wrongs which have been done, and is always ready to oblige. A *bad* character will discover bad intentions and an offensive meaning in the most innocent expressions; it perseveres in its grudges and in its desires for revenge. If it involves a certain asperity which is a torment to itself, it will be called *vindictive;* if it prepares its revenge in secret, the character will be *treacherous* or *sneaking*. Let us omit the *fine*, the *grand*, the *noble* characters which can be found in children only in a state of vague outline and distant promise. The teacher will have no trouble to find *serious* characters, that is, attentive, manifesting an early taste for knowledge, understanding what is meant by the duties of life, and reflecting before acting. But sometimes he will also find *odd* characters, that is, full of contradictions, which know neither the same pleasures nor the same sorrows as others, either because the precocity of some of their faculties bewilders them, or because the sudden variations in their temperament permit continuity neither in their feelings nor in their humor. Briefly, between good and bad dispositions, between the open and the willful, there will be a whole series of shades in characters, such as the weak, the undecided, lacking in frankness, the fickle, etc."[1]

The first duty of the teacher is to recognize this diversity of character, and consequently to make a careful study of the temperament of his pupils. In fact, it is evident that his processes will vary with the nature of these temperaments. He will have the timid to encourage, the sensitive to manage, the haughty to control, and the headlong to

[1] H. Joly, *Notions de Pédagogie*, p. 193.

tame. Speaking more generally, he will have virtues to develop and faults to repress.

The Faults of Childhood.—In his books on education, Dupanloup has made a careful catalogue of the faults of children. These faults are undeniable, but his exclusive preoccupation with them possibly prevents the reverend educator from noting with the same justice the natural virtues of most children; but there are faults of which we must take account, notwithstanding the paradoxes of Rousseau on the absolute innocence and perfect goodness of human nature.

There are intellectual faults and moral faults. The intellectual faults are lack of judgment, lack of imagination, lack of taste, lack of sensibility, lack of memory.

The moral faults often have a virtue for their basis. For example, a firm character is inclined to harshness, a vivacious character to brusqueness. There are cold characters, discreet and reserved, which tend to become waspish and savage. Likewise, melancholy natures sometimes come from a very tender heart and a very thoughtful mind.

But there are also moral faults which are not connected with any good quality: levity, vanity, capriciousness, inconstancy, dissipation, inclination to tattling, indiscretion. . . .

We will not complete the enumeration. It is necessary not to have lived with children, in order to share the optimism of Rousseau and of those whom Madame Necker de Saussure calls the "adulators of childhood." Even when the child does not inherit evil inclinations, it is certain that even his good inclinations tend to become disordered and to become faults by their very excess. "Among the sons of Adam," says Locke, "there are few who have been so favored as not to be born with some tendency

which predominates in their temperament, and it is the work of education either to destroy it. or to counterbalance it." [1]

Repression of Evil Inclinations.—When the teacher has taken account of the faults of a pupil, he should make them known to that pupil. Doubtless there are slight faults which would sometimes be aggravated by reproaching the child too quickly with them; but when it is a question of really vicious tendencies, we should not fear being a severe monitor. The first condition for getting rid of a fault, is to be conscious of that fault. The patient does not recover from moral diseases while he is ignorant of them, when they are allowed to develop without his being shown the gravity of his malady.

It is necessary, then, to rely on the good will of the child, who, when warned of his faults, if he has any sensibility, or self-love, or, better still, if he has already some idea of good and of duty, will devote himself to the work of self-correction, and will, by personal effort, combat his imperfections and evil inclinations.

It is only when the good will of the child is itself at fault that it becomes necessary to resort to discipline with its attendant punishments and its means of necessary coercion. The teacher can not be too severe with really bad instincts; he will prevent their manifestations, or will chastise them sharply if he has not been able to prevent them, and if a decided resistance renders useless his exhortations and reprimands.

Education of Good Instincts.—But moral education is not merely a work of repression and restraint; it should above

[1] Dupanloup, *L'Enfant*, Paris, 1882, Chapter IV.

all stimulate and cultivate the happy inclinations. The best means, perhaps, of correcting evil tendencies is to favor the good ones, to give them as often as possible the occasion of manifesting themselves, to encourage them by discreet praise, and, finally, to transform them little by little into decisive and lasting habits.

"I have always been persuaded," says Madame Guizot, "that education has no power against evil except the taste for the good. We do not repress a bad disposition; we fortify a good one, and I know of no better means of extirpating a fault than to make a virtue grow in its place."[1]

Formation of Habits.—Habits, according to the expression of Condillac, differ from tendencies only because they have a beginning. In other terms, habit has all the characteristics of an instinct, since they lead us into action without reflection and without effort; but it is an acquired instinct. Man is scarcely more than a bundle of habits; and some one has said, consequently, that the substance of educational science consists in giving the child good habits.

Two conditions especially govern the development of habits: 1st, the number of repetitions of the same act; 2d, the intensity of the effort displayed each time the act is repeated, if the act is painful, or the vivacity of the pleasure which accompanies it, if the act is agreeable.

Consequently, it is in the peaceable and calm life of the school, the age in which impressions are the strongest and most vivid, in childhood and youth, that habits find the greatest facilities for becoming established. Madame Necker de Saussure insists with reason on the happy influence of the calm and order of life, of serenity of soul,

[1] Madame Guizot, *Lettres de famille sur l'éducation*, p. 105.

from the point of view of the formation of habit. When the mind has not yet been disturbed by too many shocks, when it is shielded from the storms of life and the agitations of the passions, the same impressions and the same acts may easily renew themselves and give rise to good habits of feeling, of thought, and of action.

The laws of psychology being given, the teacher has no other rule to follow than to prevent the repetition of every bad act, and of every unwholesome impression, the renewal of which would engender vicious tendencies; and, on the other hand, to favor the frequent repetition of the same feelings, ideas, and actions, from which he is to derive virtuous habits.

Happy Influence of Habits.—Although Rousseau, in his chimerical hypothesis of a will always acting with reflection and effort, has pretended to proscribe habits from education, no one can call in question the happy influence exercised in general over our moral conduct by an easy, agreeable activity which results from good habits. As Madame Guizot expresses it:

"Our power is limited; force and light do not depend on us; time alone is ours. To the power of to-day it will add that of to-morrow, and that which was learned yesterday constitutes a part of what we know to-day. An act of duty has at first appeared difficult to me; the second time I shall begin it, fortified by the consciousness of the well being which its accomplishment has given me. Soon it will no longer demand effort but will become to me a necessity." [1]

Habits and Principles.—Habits, however useful they may be when directed toward the good, are, nevertheless, as

[1] Madame Guizot, *op. cit.*, lettre xi.

Vinet[1] observes, a blind, irrational element of activity, and in truth, an "obedience," a servitude. "They bind us to our own acts and connect our present with our past." However happy may be the effects of habit, it is yet necessary to protect the child against the automatic and unconscious life which would result from an absolute sway of this involuntary and irreflective power. It is necessary to reserve, a part at least, in activity, for the reflective will: it is necessary, as Vinet says, that in the intervals between the involuntary acts which characterize habit, liberty shall be able from time to time to interpose its own acts; it is necessary, as Madame Guizot says, to connect principles with habits.[2]

"The advantage of what is called habit appears to me to be to break all correspondence between our actions and our thoughts, to cause our life to proceed with but little intervention of our reflective will, just as the merit of a hand accustomed to the distaff is to twist the thread without demanding any exercise of attention. . . . That which constitutes a habit is the power which it has of separating us from ourselves, of making us move in given directions, independently of reflection and reason, and sometimes even in a direction contrary to a previous determination. May not a good course of habits become bad, if the situation changes, or simply because, being too exclusive, it will submit to the same rule of action that which should be directed by different principles?"

We need not then conceal the fact that habits, even good ones, are in some respects insufficient or dangerous for moral conduct. Their invariability, their uniformity, leaves us powerless in the presence of new circumstances. Madame Guizot sets forth this truth in a striking example:

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[1] M. Vinet, *L'Education, la famille et la Société.*

[2] Madame Guizot, *op. cit.* lettre x.

"If in the presence of the enemy, the principle of honor says to my will, 'Rise and march,' it is no longer necessary that habit make me start at the sound of the drum; but if habit alone makes me march, when the drum ceases, the enemy and honor in view, I might remain in my place. The basis of habit may perhaps suddenly fail us; the support of principle, never."

Let us know, then, in the midst of the habits which we inculcate in the child, how to maintain, or rather develop, in him the reflective principles of action which permit him freely to determine his own conduct, and to adapt his actions to circumstances, and which, in a word, prevent him from falling into an automatic and instinctive life, and always allow him in a measure to direct himself.

SUMMARY.

130. Moral education is that which develops virtuous habits and disposes the child to the practice of good.

131. All educators are agreed that character is more valuable even than knowledge, and that moral education is more important than intellectual education.

132. The family exercises over moral education a greater influence than the school; it has the advantage of the school in priority, continuity, and duration of action.

133. The school, nevertheless, has its educative action, but on one condition; that is, that the teacher, being loved and respected, has acquired over his pupils a real moral authority.

134. The basis of moral education is laid in intellectual education, and all parts of instruction may coöperate in forming morality.

135. Direct instruction in morals has its utility, but it

has the effect of making us know our duties rather than of giving us the power necessary for practicing them.

136. The essential elements of moral education are: the study of instincts and characters, the formation of habits, the culture of the sensibilities, the culture of the will, and discipline.

137. The character of the child is the aggregate of the hereditary and personal dispositions which he brings with him at birth, and which are modified by the action either of the family or of the school.

138. Character presents in the child a great many shades and even individual differences.

139. The first duty of the teacher is to study the different traits of his pupils, so as to repress the evil inclinations and to favor the good inclinations.

140. Good inclinations, encouraged and exercised, become wholesome habits.

141. Habits become fixed in proportion to the number of repetitions of the same action, and to the intensity of the effort, or to the vivacity of the pleasure which accompanies each action.

142. The duty of the teacher is to prevent the renewal of every impression, and every bad action, which may engender a vicious habit, and, on the contrary, to favor the frequent repetition of feelings, ideas, and actions which beget good habits.

143. Good habits are a valuable aid in life, because they incline us toward the good without effort.

144. But they have the defect, by their very uniformity, of leaving us powerless in the presence of new circumstances; therefore they should not have absolute sway, so as to mar our liberty and the reflective principles of action.

CHAPTER XII.

CULTURE OF THE SENSIBILITY.

Feelings and Habits. — The feelings, or, speaking more generally, our dispositions to love this or that, our affections, our emotions of all sorts, are in one sense nothing but habits. There is not a feeling truly inherent in the child's heart save when, by an almost irresistible impulse, the child is moved to love a given object or person, to make of it a familiar subject of his reflections, and when he finds pleasure in repeating the acts which correspond to this feeling. To love one's country, for example, is a feeling; but this affection is not born in a day, it has the slow growth of a habit. The child first learns what his country is; he must familiarize himself with this idea little by little, must think of it often, and must be disposed to think of it. One is not a patriot if he thinks of his country only accidentally, if he waits for some extraordinary event, such as a national holiday, or a public disaster, to call his attention to her; if the habitual course of our imagination does not lead us toward the idea of our country, if we are not disposed on every occasion to act in her interest and to devote ourselves to her.

The culture of the feelings will therefore follow the general rules which preside over the formation of habits.

General Function of the Sensibility. — In this place we use the word sensibility only in the sense commonly attached to

this term, as the synonym of the generous affections and disinterested emotions, the seat of which common opinion places in the heart. It is only in the technical language of psychology that the sensibility comprises both the affectionate feelings and the selfish passions, those whose certain result is to shrivel the heart and to make of man an unfeeling creature.

The lower forms of sensibility no doubt deserve the attention of the educator also, were it only for the purpose of opposing and restraining them. In general, they are included in the category of evil tendencies which ought to be rigorously repressed. Whatever they contain that is good,— legitimate self-love, noble ambition, praiseworthy emulation, we shall have occasion to speak of in the chapter on discipline.

But the true sensibility which makes man good and devoted, the friend, the patriot, the affectionate son,—that which animates loving hearts and tender souls, that also which inspires us with the love of the true, the beautiful, and the good, can not be too early encouraged in the child.

I am well aware that these sympathies, these aspirations of the heart, are taken for natural gifts, and that according to common opinion education is powerless to produce them. This is not entirely correct. The education of the sensibility is more delicate and more difficult than the education of the intelligence; but it exists nevertheless. There is an art of cultivating the feelings, and this art consists mainly in placing the soul of the child in circumstances the most favorable for the complete development of his natural dispositions. In all hearts, even the most unpromising, there are germs of sensibility which need only to be excited and nourished.

And if we think of the grand part which the sensibility plays in life, we are happy in the privilege of thinking that education contributes something to the development of this faculty. The great thoughts come from the heart, says Vauvenargues; and most good actions also. Our moral purposes need to be sustained, not only by the love which the good itself excites, but also by the affection inspired in us by our parents, our fellow citizens, and all those toward whom we have duties to fulfill. And while the sensibility aids us in the accomplishment of what is good, and makes the path of virtue easier, it is the surest source of happiness. What would life be disenchanted of the affections?

Sensibility in the Child.—It is an error to think that we can obtain at an early hour from the child very deep and delicate sensibility. The child is full of grace, and an affectionate smile easily comes to light up his eyes; but back of his smiles and open-hearted manners it is not always that we find a sensitive heart. Appearances are often deceiving, and there is an evident disproportion between the external manifestations of the child and the reality of the feelings which he experiences.

It will be prudent, therefore, not to hasten the sensibility and not to exact too soon the proofs of an affection which does not yet exist. By trying to cause children to exhibit feelings which they do not have, we run the risk of obtaining from them only grimaces and little hypocrisies made for the occasion.

"Madame de Silleri told the Duke de Chartres that he had a very idiotic appearance, because, when he went to see his mother, his attention was taken up by two paroquets which happened to be in the room. All these reproaches and documents could not, we should apprehend, tend to increase the real

sensibility and affection of children. Gratitude is one of the most certain, but one of the latest, rewards, which preceptors and parents should expect from their pupils." [1]

External Expression of Feeling.—It is the reality of feeling, more than the external expression in advance of the emotions really felt, that we must try to develop in the child. Let us not force the affections, but merely aid them in a gradual growth, and wait for time to mature them. To what father has it not happened, as he put his son in the presence of a grand spectacle of nature or of art, to be surprised and afflicted at the indifference and impassibility of his child? The father was affected, because, with a mind broadened, and a sensibility developed with age, he found in the beauties offered to his eyes abundant material for nurture and refreshment. The child remained silent, plunged in a sort of stupor, because there was nothing yet in his heart which corresponded to the things which were shown him. In such a case it would be foolish and dangerous to attempt to force the child to express feelings in which he does not participate. We would run the risk of giving him the habit of affectation and of causing him to lose the habit of sincerity.

On the other hand, it is best to allow the child perfect liberty in the moderate and exact manifestation of the feeling which he really experiences.

"Nothing hurts young people more," says Miss Edgeworth again, "than to be watched continually about their feelings, to have their countenances scrutinized, and the degrees of their sensibility measured by the surveying eye of the unmerciful spectator. Under the constraint of such examinations, they can think of nothing, but that they are looked at, and feel nothing but shame

[1] Maria Edgeworth, *Practical Education*, Chap. X.

or apprehension; they are afraid to lay their minds open, lest they should be convicted of some deficiency of feeling." [1]

Relation of Feeling to Action.—In the development of every feeling we should therefore be careful not to require of the child acts or words which do not yet correspond with what he is in a condition to feel. It is the same rule which, in intellectual education, requires us to proportion studies exactly to the age and power of pupils.

And yet we should not forget that it is sometimes useful and necessary to anticipate somewhat the actual state of the child's feelings, and to require him, for example, to give alms even when he does not know what charity is, and has not felt in his heart a sincere love for his neighbor. For if the feelings, when they already exist, naturally lead to appropriate actions, the actions themselves, if repeated and performed without repugnance, contribute toward developing corresponding feelings. Surely we would not recommend the theological maxim, "practice and you will believe;" but in the delicate matter of the education of the feelings, account is to be taken of the relations which connect the external act with the corresponding emotion. There is a just proportion to be aimed at in order to secure, without constraint or violence, the reciprocal influence of feelings on acts, and of acts on feelings.

Relation of Feeling to Idea.—There is also an intimate connection between feelings and ideas. We love only what we know, and as we have elsewhere said, the development of the sensibility is intimately connected with the progress of the intelligence. We have no direct hold on feeling; we can not evoke it at the word of command. But by

[1] Maria Edgeworth, *Practical Education*, Chap. X.

indirect means, by appealing to reflection, by presenting to the child, either in narratives or in examples, situations calculated to affect him, we are able, by informing his mind, to find the way to his heart. [1]

And by a reciprocity analogous to that which we have just noted in the relations between action and feeling, feeling in turn reacts on the intelligence.

"The feelings," says Madame Necker, "are not merely necessary to the mind in order to complete its knowledge; but they decide its very character, and the nature and kind of its activity. All the thoughts which occupy us during life are unfolded, so to speak, in the presence of the feeling which holds sway in our heart; it tinges the impressions which we receive, and modifies them by its power. The feelings have a perennial existence in our soul, while our thoughts merely come and go; and we can not attempt to fix these fugitive ideas unless the feelings which they have traversed have communicated to them something of their essence. Feeling produces on ideas the same effect that music produces on the words of a song; it gives them a character and a meaning which they would not have had, if otherwise presented, or which they sometimes seem literally to contradict. . . . . From the source of the tender and generous emotions there is diffused over the intelligence an indescribable sweetness and warmth of life which penetrate it to the core." [2]

The Power of Example. — It is perhaps in the education of the feelings that the power of example is most evident. It has often been said that the best way to teach children to love is to begin by loving them. Place the child in a family where there is no union or sympathy, in surroundings from which some moral drought has banished the affections, and very likely the child himself will remain

[1] See Compayré's *Lectures on Education.*

[2] Madame Necker de Saussure, *l'Éducation progressive*, t. II. p. 32.

unfeeling and cold. The source of feeling is dried up about him, he cannot draw from it. On the contrary, suppose affectionate parents, older brothers and sisters full of solicitude for a younger child, neighbors who bring to the house from time to time the proof and joyous expression of their kindly sympathy, a teacher who, understanding his office, is not merely a master who scolds, but a friend who counsels and encourages,—an adopted father having for his pupils the feelings of a parent; and in this benevolent and joyous society the sensibility of the child will be developed of itself, like a delicate plant in a genial climate.

Contagion of Feeling.—The contagion which communicates and transmits feelings from one heart to another, also manifests itself in the same soul, from one feeling to another feeling. The emotions of the sensibility beget one another. An entrance once gained to the heart by introducing to it any feeling whatever, we may say that all is gained; just as in intellectual education we are sure of success if we have obtained a single act of attention. The different affections form a sort of chain. If the child has grasped one end of it he will easily pass from link to link, and the whole chain will unroll in his hands. Sensitive in one place, a child will easily become sensitive in all others. The sensibility is not a force which can be concentrated on a single object. Once excited, it will radiate and from point to point all the living parts of the soul will become enkindled. Let us begin by inspiring children with love of family, and the other affections will be developed in addition.

Family Affection.—"If the world," as Fénelon said, "is but the aggregate of families," it may be said that the

feelings, in their variety and complexity, are nothing more than the extension of the family affections. We do not hesitate to say that the school would be powerless, notwithstanding all its efforts, to develop sensibility in children who had not brought the first germs of it from their home life. But how few are there who have been refused the tender smile of a mother! How many and more happy they, who, according to the delicate phrase of a contemporary author, "before learning to speak, have read *affection* in the eyes of their parents!"

"When people live together and love each other," says Bersot, "when each loves the other more than himself, when he is happy at their good fortune and unhappy at their bad, when he is ready to care for them if they have need of him, to defend them in case of attack, when he would rather suffer than see them suffer, when there is but one heart among them all, this is the family!"

And we may add, this is the school of all generous emotions! An affectionate son will easily become a generous friend, an ardent patriot, a devoted citizen,—in a word, a man capable of everything that is generous and good.

The Influence of the School.—Even in what concerns the development of the family affections it must not be supposed that the influence of the school is of no account. The teacher may do much to remind thoughtless or giddy children of their duties toward their families. Let them employ the language which Socrates addressed to his son Lamprocles, who had shown himself disrespectful to his mother:

"O my son, be wise, pray the gods to pardon your offenses against your mother; and in the future offend her no more lest

men despise you. Of what virtue would you be capable, if you were not to begin by loving your mother?"[1]

Companionship. — But the school offers special occasions for the development and manifestation of the sensibility. At home, the child finds in the every-day life, and in the services which he can render his parents, opportunities to exercise his devotion. But these occasions are not rare at school. Moreover, the family is not always complete. A child does not always have brothers; and sometimes there are older brothers with whom, notwithstanding the affection which draws him to them, he can not be in perfect community of ideas by reason of the difference of age. At school, on the contrary, with companions who have the same tastes and the same occupations, the community is complete, and consequently affection propagates itself. It is always because they love the same things that two children begin to love each other. Two brothers love each other because they experience the same feeling of filial piety for their parents. Two companions become attached to each other because they share the same studies and the same recreations.

Rousseau committed the grossest of errors when he fancied he could make a sensible being out of his Émile, notwithstanding the isolation to which he condemned him. Experience shows us that children who live alone generally have little tenderness and generosity of soul; reason teaches us that, in isolation, remote from the world and social relations, the only inclinations which can be developed are the selfish inclinations, or religious mysticism. Social life is necessary for the development of true sensibility; this is why the family and the school, which

[1] Xenophon, *Memorabilia.*

are in fact little societies, are necessary for assuring the unfolding of the affectionate emotions.

Friendship. — Companionship is the beginning of friendship. Every companion is a friend in expectation. The friendships of school and of college are good, not only because they assure to us some of the sweetest pleasures of life, because they attach us for the whole of life to some men whom we prefer to all others, and whom we feel bound to serve and oblige in an especial manner; but because they prepare us for the social affections in general, and because they open and enlarge our heart and sow in them the first seeds of patriotism.

Education in Patriotism. — It is in loving our companions, and in devoting ourselves to our friends, that we in reality learn to love our fellow citizens and to devote ourselves to our country. The first conception of his country that presents itself to the child is nothing more than his classmates, his companions, who are of the same age as himself, who will attain their civic duties and rights the same year, since they will start out together for the army, and on the same day will exercise for the first time their right of suffrage. Love of country is, first, love for our fellow citizens, and the first citizens with whom the child becomes acquainted are his companions in school.

The school will contribute also to education in patriotism by the direction which the teacher will be able to give to the instruction in geography and history. Our country, in fact, is not merely the generation of men to which we belong, nor even the aggregate of citizens who live at the same hour that we do. Our country is not the creature of a day or of a century; it has its past and its future. It is by skillfully exciting the child's emotions through the reading of history,

by relating to him the grandeurs and the miseries of France in the past, by showing him how our ancestors have struggled, triumphed and suffered for her happiness and her glory; it is by speaking to him also of her destinies and her legitimate ambitions for the future, that the teacher will find the key to the hearts of his pupils and will succeed in making patriots of them, especially if he himself feels with force the sentiments which he wishes to communicate.

In the family it is not merely the affection of the child which responds to the affection of his parents, but it is also the filial gratitude which arises at the thought of the services rendered by the father and the mother. So in society, it is well for the citizen to take account of all that he owes to his country. If he reflects on all the benefits assured to him through the organization of the state which is vigilant in protecting the interests of all its members, he will be still more disposed to serve his country and to love her with all his strength.

The Sentiment of the Good.—Sensibility attaches us not merely to persons. Abstract objects, like the true, the beautiful, and the good, also have a natural attraction for us. And the proof that they interest the sensibility is that we are able to find in the practice of the good, in the pursuit of the true, and in the contemplation of the beautiful, profound sources of happiness, inexhaustible pleasures. Now, wherever there is pleasure, there is love, pleasure being but the manifestation of feelings that are satisfied.

The sentiment of the good, when it has reached the highest stage of its development, supposes a moral consciousness perfectly enlightened, in which the idea of good and the idea of duty serve as bases for the feeling. There is then a natural inclination of the soul to do the right and

to shun the wrong, an inclination which brings us pleasure or pain according as it is satisfied or thwarted; and this inclination is developed in proportion as the mind better conceives the idea of the good and the idea of duty.

But on the start, and in the child, we can not think of making high moral conceptions the basis of feeling. In its beginnings, the sentiment of the good is confounded with the affection inspired in us by the persons who love us and who are called to direct our life by their example, their advice, and also by their commands.

"For a long time," said Töppfer, "I have not distinguished the inner voice of my conscience from the voice of my preceptor. So when my conscience spoke to me I thought I saw a black gown, a magistral air, and spectacles on the nose."[1]

It is only slowly that the idea of the good disengages itself from the sense-impressions of infancy, and that, in consequence, the moral feeling acquires all its power. In fact, it truly exists only when the emotions to which it gives rise correspond to clear intuitions of the reason.

The Other Feelings.—The feeling of the true is no less real than the feeling of the beautiful. It is through this feeling that scholars who obstinately pursue their work through the whole of life never know failure or discouragement. The pleasure of a discovery hoped for or accomplished accompanies them in all their researches, and suffices to sustain their efforts. Doubtless it is not possible for the children in our schools, nor for future workmen, to taste the infinite joys whose perfection is known only to the men of disinterested science, and the secret of which they have often confided to their readers while thanking the truth whose cultivation has constituted their happiness. But

[1] Töppfer, *Bibliothèque de Mon Oncle.*

there is nevertheless for the humblest pupil himself a participation in the feeling of the true, in the pleasures which study procures for him, in the joy which the successful solution of a problem gives him, and also, from another point of view, in the humiliation caused by the falsehood discovered in his speech, and for which he suffers and blushes. In fact, the feeling of the true is not attached merely to knowledge, but also to the expression of the truth.

The feeling of the beautiful is no more the privilege of artists than the feeling of the true is reserved to scholars alone. Doubtless it acquires its full power only with adepts, or with those who have had the benefit of a higher education; but even in ordinary education it is possible, and I add it is necessary, to associate the child, in a certain measure, with the emotions of nature and art. The pupil who will put taste and elegance into all that he does, even into his writing, who, besides, shall be trained to taste the beauties of literature, to admire a fine piece of music or a beautiful painting, and who can sing and sketch with taste, will be repaid for his trouble by the pleasure which is always procured by the contemplation or the production of works fashioned according to the ideal.

The culture of the sensibility, even with the children of the common people, is not complete unless, to the generous affections which stifle selfishness, we can add the noble, delicate, and elevated emotions of virtue, science, and art, which turn aside and disgust them with gross and purely material enjoyments.

SUMMARY.

145. Feelings are really nothing more than habits; for their character is to be ever carrying our thoughts back to the object loved and to dispose us to repeat the same acts.

146. The sensibility is chiefly the aggregate of our generous affections, and by reason of the important part which the affections play in life, the education of the sensibility, if it is more delicate and more difficult, is not less necessary than the education of the intelligence.

147. The sensibility is only developed little by little in the child; it must not be forced; we must wait for time to ripen it, and so must not compel the child to manifest feeling which he has not yet felt.

148. However, there is such a connection, such a reciprocal influence, between the action or external expression and the feeling, that it will often be wise to anticipate the emotions really felt and to require the child to act in the direction of an inclination, even before this inclination has been developed in him.

149. The development of the sensibility is intimately connected with the progress of the intelligence; we love only what we know.

150. The power of example is nowhere greater than in the education of the sensibility; let us love children and they will love us.

151. The feelings communicate themselves from heart to heart; but in the same heart, by a sort of inner contagion, they engender one another.

152. The family affections are the source of all the other emotions; the school would be powerless to develop the sensibility if the child did not already bring from home the germs of affectionate inclinations.

153. The school develops the sensibility in the relations of companionship and friendship.

154. It is by loving our companions, with whom we are connected by community of age and study, who enter along with us into social life, who are called along with us

to exercise their rights and to fulfill their civic duties, that we learn to love our fellow citizens, which is the first condition of patriotism.

155. The education in patriotism is completed by historical narrations, by studying the soil of the country, by the reflections which we make on the past and on the future of our country, and also by the consideration of all that we owe her.

156. To the generous affections which oppose selfishness and attach us to others, we must add the noble and elevated emotions which are derived from the feelings of the good, the true, and the beautiful.

CHAPTER XIII.

EDUCATION OF THE WILL AND THE CHARACTER.

Function of the Will.—We have certainly done much for moral education when we have developed the feelings, and, in general, good habits. But morality supposes, however, another element which is no other than the will, that is to say, the power of freely determining self, with reflection, to an action of one's choice.

The will is sometimes necessary to form habits themselves; for habits, notably the best ones, do not always grow out of easy, agreeable acts, repeated without effort; they often suppose painful, fatiguing actions, which the will alone gives us power to perform.

The will is necessary, again, in order to maintain habits. This necessity often occurs in our moral life, under the influence of new circumstances, of crises, of storms of passion, which disturb the regular and accustomed course of our existence, and which shake the very foundations of our strongest habits.

It is the will alone which can, in this case, save us and keep us in the right road.

It is no less necessary that the will intervene in order to assure to our feelings all their power of action. Doubtless, every feeling is in itself a principle of activity, it disposes us to act and to act in a direction which it determines. It sometimes happens, however, that the sensibilities do not suffice to impel us to actions which duty commands. A man loves

his country; but he has not the necessary courage to sacrifice for it his personal interests. He loves his parents; but he has not the energy which would be necessary in order to prove it to them by his acts. There are some sensitive souls, very sensitive, who are content to abandon themselves to their inward emotions, but who remain weak and sluggish in action. The will is still necessary to liberate from their indolence and inaction these vacillating, indecisive natures, these sensibilities more delicate than strong.

Finally, it is very evident that neither habits the most strongly rooted, nor feelings the most perfectly developed, constitute complete morality. In order to found the government of our life on an indestructible basis, in order to be truly free, we must have a will always ready to seize the reins of our moral conduct and to direct our moral activity according to the dictates of reason.

The Will and Character.—What is called will, in fact, is not the power to perform once or twice reflective acts; it is the faculty, if not always active, at least always ready to act, of conforming our life to the dictates of reason; it is, in some sort, if we may associate these two words, the habit of the will.

It is this power of willing, always within the reach of souls energetic and truly masters of themselves, that constitutes moral power, or, in a single word, character. Character, thus understood, is without doubt the aggregate of moral faculties in opposition to intellectual faculties; but it is above all the energy and firmness of the will.

Weakness of Character.—Weakness of character is a reproach to the men of our time. Everywhere we hear pessimists complacently repeating that character is growing weaker, that it is disappearing.

We do not believe that these complaints are altogether legitimate, and we shall presently state our reasons. But if the justness of these complaints is doubtful, their meaning is at least very clear. The meaning is, that our contemporaries lack energy and courage in their conduct, and firmness in their convictions. Character, in this particular sense, is no longer character as defined, for example, by Alexander Martin in his book, *L'Éducation du Caractère*, in which it comprehends all the moral faculties. No, when the critic points out the pretended weakness of character in our century, he has in mind only the faculties which relate to action — power of soul, firmness, courageous energies of spirit, qualities which assure the independence of the moral personality. Character, understood as the distinctive traits of each of us, is one thing; and, from this point of view, by reason of the progress of instruction and by reason of the political liberties enjoyed by us, there never has been so great a diversity of character as in our own time; but very different is character taken absolutely, that is to say, which may be defined as fixedness in principle, firmness and decision of resolution, and perseverance in execution.

Is it true that on this point we are on the decline, that there is a real decadence in character? We do not believe it, and those who affirm it are, in our opinion, the dupes of an appearance, and the victims of an illusion which it is easy to explain. In former times, when the absence of political and religious liberty enclosed all men in the insuperable circle of routine and tradition, in the uniform compass of the same actions, in the monotony of an existence everywhere regulated by the same rule, it was not necessary, in order to satisfy the exigencies of life, to give proof of much moral energy. It was sufficient to be docile, and to

submit to being led. The conditions of modern society have changed; they have enfranchised, have emancipated the individual; they have made each one master of his own destiny; they have enlarged the sphere of action in which each citizen moves; they have extended competition; they have opened in all its liberty, noble but dangerous, the struggle for existence. The result is that modern society imposes on all its members an amount of energy and courage much more considerable than that which was demanded by the old régime. The men of our time need more character than the men of former times, who could do without it. Hence a disproportion, apparent to all, between the moral power necessary to cope with the new conditions of life, and the insufficiency, in the midst of a society in which liberal education has not yet borne all its fruits, in the degree of energy attained by the millions of men who compose the nation.

It is no longer of a few personalities alone, of a few privileged individuals, that a régime of liberty demands character; it is of the humblest, of the most obscure of all the children of the great democratic family. And, to conclude briefly, the truth is that there is no less of character than formerly, but more of it is required.

Education of Character in the School. — So we should redouble our efforts in order to effect, by every possible means, the education of character, and to lessen more and more the margin which still exists between the moral forces at the disposal of the people and the activities to which they are called. Surely, we must appeal particularly to personal effort, to the education of the whole life, in order to develop character. But in the school the soil may be prepared, and a few fruitful seeds sown from which will spring later the

qualities which make the man. To the question, "May teachers contribute to the formation of character?" we do not hesitate to reply in the affirmative. To answer no, would be to deny every educational influence both to instruction and to school discipline.

In What Character Consists.—The two faculties which contribute especially to the forming of character are the intelligence or reason, and the will. A man of character must have settled convictions, principles—this is the function of the intelligence. He must also have decision, resolution, firmness—this is the function of the will.

One man has courage, he throws himself resolutely into action; he faces danger with intrepidity; he does not allow himself to be ruled by external influences; he is independent and daring. Yes, but not having reflected sufficiently on human affairs, wavering between different opinions, passing, according to the succession of his caprices, from one idea to another, he performs with the same resolution contradictory acts; he is unable to introduce unity into his life. He lacks character.

Another, on the contrary, is circumspect, reflective; he has taken a decided part in great political, religious, and social questions; he knows where the truth lies and does not change his opinion. Yes, but he is timid; he does not dare to conform his conduct to his principles; he has continual fear of compromising himself; he is afraid to manifest his sentiments. He also lacks character.

It is, then, at once on solid intellectual principles and on a courageous will that a firm character is founded. Neither of the two elements is more necessary than the other. Let us hasten, moreover, to add that, in general, an enlightened and reflective reason leads by a natural inclina-

tion to a resolute and intrepid will. There is in every solid conviction a germ of courageous activity.

How Character is Formed. — The instructor, then, has his part in the education of the character or of the will. On the one hand, by intelligent instruction he will undertake to develop attention, reflection, the habit of thinking independently, of believing only what is well understood — in short, the active faculties of the mind. On the other hand, by a liberal discipline he will present to the child every legitimate occasion of acting for himself and of exercising his will.

Character and Methods of Instruction. — Those who say that character is growing weaker in our day, if they were correct, would make the most terrible of criticisms on the new methods of instruction. It would then be necessary to admit that the exercises of pure memory, routine, and mechanical instruction are better than active methods, than rational intuition, than incessant appeal to the free intelligence.

But it is evident that this is not the case. If our actual processes of instruction are practiced with skill; if the prudent teacher is careful not to scatter the child's attention on too many different subjects; if he knows how to direct it often to a few essential points, and, above all, if he avoids cramming and purely passive instruction; if he arouses curiosity, activity, and mental life among his pupils; the school will send them out into society fully prepared to become independent men, capable by the continuation of their reflections of forming solid and decisive opinions.

Discipline and Character. — So, also, it is no less certain that the repressive and violent discipline of former times

had not for the formation of character the same advantages as the liberal discipline of to-day. By a system of compression, of excessive severity, of perpetual constraint, all the initiative in children was stifled; they were accustomed to being led by others, and were sent forth into life unable to govern themselves. What very different results ought we not to expect from a discipline which, even when it imposes obedience, requires that this obedience shall be voluntary, and which, on all occasions where the child may be abandoned to himself, allows him perfect freedom of conduct through the exercise of his own reason!

The hopes of those who have labored to reform the modern school would be very much deceived if the children who attend it should not there learn more and more to become strong and valiant men. No, it is not possible that in introducing more liberty into the régime of school discipline, more light and more reason into instruction, that the cause of developing moral energy has not been served. Let us not forget, indeed, that it is in proportion as we have more reason and more will that we are better qualified to display in life the virtues of character.

Without doubt the feelings, when they are disciplined, may also aid us by imparting to the principles of reason and to the energies of the will an ardent and sovereign inspiration. But in general, however, the sensibility, which is by its nature discordant and capricious, is, in fact, the enemy of character. Let no one say that this statement is contradictory to what we have said concerning the moral functions of the sensibility. The feelings, enlightened by the intelligence, made firm and definite by habit, are one thing; but quite another is feeling in general, that is to say, a disposition of the soul to be moved to excess

by everything, and in no case to preserve its composure and its calmness.

The Virtues of Character. — A contemporary author, M. Maneuvrier, has strikingly set forth, in a recent book, the reasons which recommend to the attention of teachers the education of the will even more than the education of the intelligence.

"To develop the intelligence and neglect the will," says he, "is to sacrifice the principle to the accessory."[1]

The virtues of character, according to M. Maneuvrier, may be reduced to four principal types: independence, justice, courage, and goodness. To comprehend in character anything more than independence and courage is, perhaps, to give undue extension to its scope. Goodness, in fact, is an affair of the sensibility, and justice the work of the intelligence, rather than effects of the will.

The Virtue of Independence. — Strictly speaking, independence is the very essence of will; it is the liberty of judgment and of action; or, as M. Maneuvrier expresses it, the habit of determining self to action, without undergoing external constraint.

Hence, while guarding the rights of discipline and maintaining the authority of parents or of the teacher, the duty of respecting as much as possible the liberty of the child.

"He alone will one day be able to form a strong resolution, submit to a law which restrains him, respect an authority which displeases him, whom you have accustomed daily, through long years, to choose the good, to subordinate, of his own accord, that which amuses him to that which instructs him, and that which he

[1] M. Maneuvrier, *L'Éducation de la bourgoisie sous la République*, p. 294.

desires to do to that which he is morally obliged to do. When you shall have made a free pupil, you will have educated a free citizen."

This we shall not deny, but what we can not accept is that, in order to make this "free citizen," it is necessary to give the pupil's will entire freedom. The discipline of the school, voluntarily accepted, is a school of independence, whatever may be said of it. Independence, indeed, does not consist in acting according to our caprices, without rule or rein, but is free submission to law, and this is why, as Madame Necker de Saussure rightly affirms, "public education surpasses domestic education as a means of strengthening character and developing energy and the manly virtues."[1] As the same author observes, "obedience to law subdues the will without weakening it."

The Virtue of Courage. — Courage, that other fundamental quality of character, the secret energy which causes us to undertake a thing and sustains us in it, demands for its development more free initiative than independence itself.

A man may be independent although he may always have been subjected, in his childhood and youth, to the rules of an exact discipline. He is scarcely courageous, if the accidents of life have not put to test the intrepidity of his character. School life, we must remember, in its uniform and regulated exercises, scarcely admits of these accidents, of these unforeseen circumstances, which effect the education of courage. It is also undeniable that civilized people are less courageous than savage people.

In order to remedy, from this point of view, the consequences of the school régime, M. Maneuvrier recommends above all physical exercises, or "sports," as the English say.

[1] Madame Necker de Saussure, *L'Éducation Progressive*, I, viii, ch. iii.

We shall not dispute it, but we should not forget that courage finds occasion for exercising itself outside of physical exercise. We shall in a certain measure favor the courageous energy of the child if we accustom him to face without timidity the tests of interrogation, oral exposition at the board, in the presence of his classmates who are not always benevolent, or even, when occasion offers, in the presence of strangers, and in a general way, if we exercise him in approaching resolutely the difficulties of study. The industrious and studious pupil is courageous in his way.

The Feeling of Responsibility. — It is then by respecting the spontaneity of the child, the germ of his independence and liberty, that his will may be strengthened; it is by giving to its instruction every legitimate occasion for exercising itself, it is by avoiding all processes of violent discipline which "break" the wills of children.

Abandoned to himself as much as possible, without compromising either his health or virtue, the child will find in the exercise of his liberty peculiar pleasures which in turn will quicken his natural taste for independence. At the same time, he will acquire, little by little, the feeling of his responsibility, he will understand that it devolves upon him to avoid such a fault, to acquire better and more promptly such a virtue. He will render to himself an account of the consequences of his acts, and consequently he will reflect more, before engaging in acts whose effects he has calculated beforehand.

Good Will. — It would be of no account, but would be dangerous to develop the will, if with the force which we create in the child we do not associate the idea of good and of duty, of which the will should be merely the instrument. In itself, indeed, the will may be the instrument of vice as

well as the instrument of virtue. In their way great criminals give proof of will power. We may will the evil as earnestly as the good. It is then a good will that it is especially important to train and strengthen, which is equivalent to saying that the culture of the will is not to be separated from the culture of the reason and the moral conscience. Let us be able to will, but let us will only that which conforms to the laws of virtue.

SUMMARY.

157. Moral education is complete only on the condition that, to good habits and to affectionate and noble feelings, be added a strong will.

158. The will is necessary, at times, to form habits, to maintain them against passions, and to assure to the feelings their full power of action.

159. It is necessary also in order to put really into our hands the moral government of our life, to be the instrument of the decisions to be made in unexpected circumstances.

160. The will always ready to act is called by another name, character.

161. It is not correct to say, as we often hear it said, that characters are growing weaker every day. The truth is that modern society, with its peculiar conditions of greater liberty, requires more energy and more will. There is no less character now than formerly, but more of it is necessary.

162. The education of character is therefore more necessary than ever, and constitutes one of the most important parts of the teacher's duty.

163. In order to form character, the teacher should remember that character comprises two series of elements: on the one hand, settled convictions or principles, which

belong to the intelligence; on the other hand, decision or resolution, which belongs to the will.

164. So that education must, at once, by an intelligent instruction, develop personal reflection, the habit of thinking for one's self, and, by a liberal discipline, accustom the child to effort, to free initiative.

165. The virtues of character are above all independence and courage.

166. It is by respecting the liberty of the child that we may render him independent; but we are not to believe that the school régime, founded on obedience to law, compromises the independence of character; obedience to law subdues the will without weakening it.

167. Courage, in order to be developed, demands especially trials and perils which the regular life of the school does not always permit.

168. We may, however, even at school, exercise the courage, either in the physical exercises, or in the intellectual efforts which are imposed upon the child.

169. The effect of a liberal education of the will is to strengthen the feeling of responsibility.

170. The will may be the instrument of evil, as well as the instrument of good; but it is only the good will that is to be cultivated.

CHAPTER XIV.

DISCIPLINE.—PUNISHMENTS AND REWARDS.—EMULATION.

Discipline.—Whatever result we may expect from moral education properly so called, it is impossible to conceive a system of education in which it will not sometimes be necessary to resort to disciplinary means, and to imagine a child so devoted to the doing of good by his happy disposition, his benevolent feelings and his habits, that it is useless to hold him in check by the fear of punishment, or to urge him forward by the hope of rewards.

But it is important to understand that discipline, in the proper sense of the term, is far from being the whole of moral education, or even the essential part of it; that one is not a good teacher merely because he punishes or rewards as occasion requires; in a word, that disciplinary means are but the accessory instruments of the moral education whose elements we have indicated in the preceding lessons.

Punishments and Rewards.—A few utopists excepted, all educators are agreed that we can not dispense with punishment nor do without rewards.

"I hear it maintained by reformers," says Jules Simon, "that we must never resort to punishments; that the teacher, and especially the father, may and should restrict himself to good advice, to good examples, should appeal to reason and count on the effects of a well-directed emulation. Whenever this is possible, I ask for nothing better. I see others who allow of

repression and will not hear rewards spoken of. 'You will make children proud,' they say. 'You will take from them the feeling of fraternity and the just conception of equality.' No, I will teach them that labor and good conduct are the conditions of all success in life, which is very good instruction. The equality which I revere does not consist at all in giving the same advantages to the lazy as to the industrious, but in treating each one according to his merit and his services."[1]

We do not deny the difficulties which punishments and rewards may present: punishments which intimidate and render timorous, which sometimes cause feelings of animosity and revolt against the teacher to spring up in the pupil's heart; rewards which make proud and which often engender vanity and jealousy. But these difficulties may, in great part, be extenuated and even made to disappear, if we know how to practice the art of punishing and the art of rewarding with discretion, moderation, and tact. Besides, it is wholly useless to philosophize and argue at pleasure on the evil consequences of disciplinary measures, because it is impossible to suppress them, and because, notwithstanding their defects, they constitute real educational necessities. It would be necessary to withdraw from the conditions of human nature to admit that children, or even men, can be governed in a multitude of cases otherwise than by the hope of reward or by the fear of punishment.

The System of Natural Consequences.—Without consenting absolutely to the chimera of those who dream of an education without punishments, Herbert Spencer approaches it when he requires us to suppress the whole machinery of artificial punishments in order to resort to the action of nature.

[1] *Revue de Famille*, March 15 and April 1, 1889.

This was also the system of Rousseau, who would have Émile punished by nature alone whenever he commits a fault. In a fit of anger Émile breaks a window-pane of his room, and a hard cold will teach him what it costs to expose himself to the cold air of the night. "Offer to the indiscreet wishes of a child," said Rousseau, "nothing but physical obstacles or punishments which result from the actions themselves and which he will recall on occasion."

So also Herbert Spencer declares that the child has no better teacher than nature. It is nature who, by her inevitable reactions, will correct the child for his failures, punish him for his faults, and make useless the intervention of the teacher. The imprudent child will burn himself in the flame of a candle, and prick himself with needles, but will not commit these faults a second time. A child who has thrown his room into disorder will be required to set it to rights. If he is not diligent enough to be ready for the walk, he will be left at home. The knife which he has broken will not be replaced, nor the dress which he has torn. And these natural punishments, adds Mr. Spencer, have this particular merit, that they are always proportioned to the wrong that has been done, action and reaction always being equal; and at the same time they are the surest and most effective, since nature is pitiless and inflexible in the repression of every act which is contrary to her laws.

Criticism of this System. — It will take too long to refute all the weak points of the system which we have just described. Let us restrict ourselves to the most general criticism.

And first, we are hardly convinced that nature in her action is as moral as the English educator assumes. Mr. Spencer's system is based on the idea of the immanent

justice of things. Now we must certainly acknowledge that this natural justice is often at fault. The inebriate is not always punished by an indigestion, or a headache, for the excesses which he has committed, and there are lazy people who succeed in life.

On the other hand, it is not true that the reactions of nature are always in a just ratio with the gravity of the fault committed. A slight indiscretion may have terrible consequences. Émile, in his chamber opened to the winds, may not only catch cold, but may fall seriously ill and die of pneumonia.

What is still worse is, that the punishments are often slow to appear, and thus allow an ailment, which should be corrected immediately, all possible leisure to develop in perfect liberty.

"Will the adolescent," says M. Gréard, "be allowed the time to reflect at his ease on the results of his indolence? If he does not perform, or performs badly, his duties as a scholar, if he does not regulate his character, if the reform of his evil inclinations is postponed until their consequences are exposed, it is nothing less than his entire destiny that may be compromised. Nothing is better than to grant a large part to personal experience in connection with reason and example, which are too often insufficient; but to expect the young man to be taught exclusively by his own faults, is the most formidable of illusions."[1]

Let us add, finally, that the system of natural reactions rests on a false principle, namely, that it is not necessary to introduce into education moral ideas, as the idea of duty and merit, and that it suffices to leave the child in presence of his interests while subjecting him, not to the authority of the moral law, but merely to the blind and unconscious forces of nature.

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[1] Gréard, *Éducation et Instruction*, t. ii, p. 180.

Thus Mr. Spencer himself, as we have noted elsewhere,[1] does not follow his theory to the end. To the reactions of nature he finally adds the reactions of others' feelings which are manifested by the censure and displeasure of those who surround the child and whom he loves enough to be affected by their coldness. In other terms, the discipline of nature can be but a preparation for moral discipline.

Necessity of Punishments. — It is necessary therefore for the teacher to intervene directly in order to substitute for the very slow action of nature the intelligent action of his own authority, but an authority wholly impersonal, and which ought in general to be but the expression of an immutable rule. Just as the best government is that where the law reigns as sovereign mistress, and in which there is the least participation of the arbitrary caprices and wills of men; so we may say that, as a rule, the best discipline is that where the teacher acts merely as the impassible guardian of authority. School discipline, however, differs from political government in the sense that the man ought sometimes to appear back of the master, not, doubtless, to give free course to his anger and bad humor when he punishes, but at least to manifest his goodness when he rewards. If it may be said, in fact, that the manner of giving is worth more than what we give, this is also true of rewards and of the manner of giving them.

The penal code of the school first comprises reprimands. But proofs of disapprobation, which suppose that the feeling of honor, or at least affection for the teacher and the fear of displeasing him, are already well developed in the pupil's heart, are not always sufficient; they scarcely affect children who have not a sincere and profound respect for

[1] *Lectures on Teaching*, pp. 12, 13.

the teacher's words, or who are insensible to shame. We must therefore resort to effective punishments which, announced in advance and inflicted when necessary, overtake the pupil not only in his self-love but also in his interests and in his pleasures. Such are the punishments most often employed in school: the withdrawal of good marks, partial privation of recreation, keeping after school, etc.

General Characteristics of Punishments. — Whatever the punishment may be, it ought first of all to be a means of intimidation to prevent the repetition of a fault by the fear which is inspired by the certainty of being punished; and in the second place, it should be a means of reform. For this purpose it ought to be presented to the child as a sort of expiation or a compensation for the evil which he has done; it should force him to retire into himself and to correct the evil inclinations which are the source of his habitual faults. It would be very mischievous, in fact, if the pupil were to consider the punishment as a necessity to which he must submit and which should be the ordained ransom for faults which he would not renounce.

In order to be just and efficient, and to be kept within bounds, punishment should satisfy the following rules: 1. It should be proportioned, not only to the gravity of the offense, but also to the degree of the pupil's sensibility; 2, it should not become commonplace, — it should not be repeated so often as to harden the child; 3, it should be carefully graduated; we ought to begin with light punishments and not exhaust the final severities of the code until it becomes necessary.

But above all we must try to establish in the child's mind an intimate connection between the punishment and the fault committed.

Punishment Ought Above All to be Moral. — The moral quality of punishment is well expressed in the following passage which we borrow from M. Anthoine:

"To punish," says M. Anthoine, "is to inflict a pain the recollection of which persists as a warning not to fall again into the same fault. The nature of this suffering depends on the nature of the being to whom it is addressed; it will necessarily be physical for a material being, for him who lives and feels only through the body; but even within this class how many degrees there are, from the blow of the whip which makes the dog howl, or which draws blood on the child's back, to the privation of dainties with which the most spoiled of children has at least been threatened! For one whose nature may be cultivated and refined, punishment may be purely moral.

"If I recall the days of my infancy correctly, that which always punished me most in a punishment was the thought that I had been punished."[1]

Different Kinds of Punishment. — When the teacher has acquired a real authority over his pupils, and when he has learned to make himself and the class-room loved, he may easily vary the processes of discipline; he may invent punishments which, without effect in other places, are very efficient in his school. For example, we know of teachers who, if they are not pleased with a pupil, simply cut him off from the number of those whom they will take out with them for a walk on the following Thursday. Somewhere else, in a school where there is a study hour before or after the class, according to the season, the most obvious punishment is to forbid pupils entrance into the room.

Corporal Punishment.—On the question of corporal punishment we know that French pedagogy, which forbids it, is

[1] M. Anthoine, *op. cit.*, p. 17.

profoundly distinguished from foreign pedagogy, which usually tolerates it and sometimes recommends it. In Germany particularly there are still to be counted very urgent advocates in favor of material punishments. They are effective, it is said; they do not require much time; they are perfectly adapted to children with whom "the physical nature prevails over the intellectual and moral nature." The official circulars of the Bavarian government limit the number and kind of blows: six blows of the rod on the hand, or, in grave cases, six lashes. Grave teachers discuss the respective advantages of the cane and the rod; they ask whether the rod should be flexible and smooth, of the size of the little finger, and on what parts of the body punishment should be administered. Finally, they call our French repugnance for these processes of another age "false humanity," and quote with admiration the pleasantry of Dr. Zimmermann who said: "Our birch is a precious tree, were it only because it produces the eminently practical instrument by means of which the education of man has been carried to the culminating point which it has reached to-day."

For our part, we are not disposed to recognize the virtues of the birch, nor to admit the legitimacy of the discipline which Locke in his day pronounced the worst of all.

"This sort of correction naturally breeds an aversion to that which it is the tutor's business to create a liking to. . . . Such a sort of slavish discipline makes a slavish temper. The child submits and dissembles obedience whilst the fear of the rod hangs over him; but when that is removed, and, by being out of sight, he can promise himself impunity, he gives the greater scope to his natural inclination. . . . If severity carried to the highest pitch does prevail, and works a cure upon the present unruly distemper, it is often bringing in the room of it worse and more

dangerous disease, by breaking the mind; and then, in the place of a disorderly young fellow, you have a low-spirited, moped creature."[1]

Rewards.—When we speak of discipline, the first idea that occurs to the mind is that of punishments; but rewards also form a part of disciplinary agents, and a good system of rewards may even render the employment of punishments, to a certain extent, useless. To proscribe rewards would be an attempt to exclude from education one of the most important springs of action, namely, emulation.

"Through lack of the stimulus of emulation," said Pascal, "the pupils of Port Royal fall into listlessness. 'Émile, who has neither stimulus nor rein,' wrote Voltaire, 'will end by doing foolish things; and Rousseau's fifth book is not precisely to demonstrate the contrary.' A reward is the proof which translates to the eyes of the child, to the eyes of all, the esteem of which he is the object."[2]

General Character of Rewards.—Just as the object of punishment is to establish in the child's mind an association of ideas between the fault committed and some suffering or privation; so a reward is intended to connect the idea of a duty accomplished with that of the pleasure which results from it.

The child can never be led by the simple attraction of the good pursued for its own sake. The feeling of duty, limited to its own resources, said Guizot, can not be to the child a sufficient motive. Why then refuse to take advantage of the principles of activity which God has made inseparable from human nature by giving to men needs, interests, and passions? But of course rewards must be used to excite

[1] *Thoughts on Education*, §§ 49 et seq.

[2] M. Gréard, *op. cit.*, p. 182.

in these feelings only the noble and the good which they contain. Rewards which favor the development of dangerous motives ought to be proscribed without mercy. Of this sort are the purely material rewards which, in a general way, fortify in he child the taste for pleasure, and which, for example, encourage gluttony in boys and coquetry in girls.

A contemporary educator, Alexander Martin, rightly observes that there is a great difference between a reward promised in advance, which the pupil claims as a sort of salary with the fierceness of a creditor, and an unexpected reward, granted with perfect freedom by parents or by the teacher, and which, following an accomplished duty, comes simply to increase the pleasure which the child already finds in a satisfied conscience. Notwithstanding the correctness of these observations, it is almost impossible, at least in public education, to subscribe to the conclusions of the author who would discard rewards of the first kind, those which are announced and foreseen. In school, rewards, like punishments, should for the most part be fixed by a rule which the teacher should depart from as seldom as possible.

Different Kinds of Rewards.—Rewards vary with the nature of the feelings which they aim at in the child. At one time, like caresses, they are addressed only to the affectionate emotions and are chiefly in place during infancy; at another, like praises, they flatter self-esteem and the love of approbation; and at still others, like prizes and little bankbooks which are distributed at school, they respond to interested instincts.

Belgian educators recommend: 1. The approbation of the teacher; 2, good marks; 3, prizes; 4, credits in the book of honor; 5, the pleasure of making awards.

This is about the list of rewards used in French schools. M. Rendu enumerates them as follows: Rank in class according to weekly result of compositions and examinations; good marks granted for conduct and for application to study; exemptions and notes of approval; the inscription on the roll of honor displayed in school; medals and decorations; distribution of prizes.

Commendation.—Strictly speaking, all rewards are but the external signs of the teacher's approbation and of the judgment which he places on the merit of his pupils. It is their merit, in fact, and not the natural gifts of their intelligence, which must be rewarded. Children must never be praised, said Guizot, for what has not depended on their will or for what has not cost them an effort and a sacrifice. Within these limits the best of rewards is certainly the commendation announced by the teacher, a commendation which will be the more effective as the teacher has been able to inspire a greater affection and respect, and as the pupil experiences the more vividly the feeling of the honor bestowed.

Emulation.—Commendation and rewards of all sorts would not produce their effect if we had not appealed to that powerful principle of activity called emulation, and which is the result both of a personal feeling based on self-esteem, and of a higher feeling, a sort of aspiration for excellence and perfection. In fact, in its noblest aspect, emulation resembles generous ambition or love of glory. Doubtless the rival wishes above everything else to equal or surpass his competitor, but he also pursues his ideal; and the function of the teacher ought to be to develop emulation in this direction, turning it aside from its selfish tendencies in order to direct it toward the pursuit of the good.

Emulation is a delicate spring which must be handled with prudence, and which ought not to be stretched beyond measure; but which, in the hands of a skillful teacher, animates the school, excites to study, and maintains a noble ardor in intellectual pursuits.

Higher End of Discipline.—Discipline, with its punishments and rewards, has for its first result the maintenance of order and decorum in the school, and the introduction of studious habits; but it is far from having obtained its purpose if it is content with that immediate satisfaction felt by the teacher when he sees silence reigning around him in the ranks of his attentive and studious pupils. This result might be obtained even with bad discipline, a discipline of iron, which considers each pupil as a creature to be subdued. The teacher must aim higher, must look beyond his class-room and must think of the future of his pupils. The day will come when they will have to govern themselves, when they will no longer be subject to the rules of the school. And this makes still more apparent the necessity of a discipline, at once mild and strong, affectionate and severe, of a liberal discipline which, while governing the child, refrains from humiliating and enslaving him, from destroying his natural inclinations, but which prepares him for becoming a man, that is, for remaining free while obedient to law.

SUMMARY.

171. The best conducted moral education, that which aims to form the habits, to cultivate the feelings and to develop the will, can not dispense with discipline, that is to say, with a system of punishments and rewards.

172. Punishments and rewards doubtless have their disadvantages; the first may humiliate the child and excite

the spirit of revolt; the second may make the pupil proud and inspire him with vanity; but they are necessary notwithstanding, and the skill of him who uses them can correct their defects.

173. It is an illusion to attempt to govern children without resorting to the fear of punishment or to the hope of a reward.

174. It is also an illusion to think of entrusting to nature alone the care of punishing the child.

175. The system of natural reactions is inadmissible, because nature is not always just, because her action is slow and often out of proportion to the gravity of the fault committed, and finally, because this system substitutes the calculations of interest for moral ideas.

176. The teacher ought to intervene directly by reprimands and by effective punishments.

177. Punishments should be at the same time means of intimidation and means of reform.

178. In order that a chastisement may be effective, the child punished must especially feel in the punishment the shame of being punished.

179. When the teacher's authority is firmly established, it is easy for him to invent new punishments and to vary his means of discipline.

180. Corporal chastisements, still tolerated abroad, are the worst of all.

181. Discipline comprises not only means of repression, but resorts to rewards or means of excitation and encouragement.

182. The purpose of a reward is to associate with the idea of a duty done, the idea of the pleasure which results from it.

183. It is necessary to make a choice among the differ-

ent feelings which are aimed at and are attained by rewards; the principal one is self-esteem, the source of emulation.

184. Rewards ought to be merely the external signs of the teacher's approbation and of the judgment which he passes on the merits of his pupils.

185. The higher aim of discipline is not merely to maintain order and habits of study in the school, but to prepare children for becoming men and for governing themselves.

[CHAPTER XV.

THE MAJOR MOVEMENTS OF THE MIND I LEARNING.—A SYNOPSIS OF APPLIED PS

Two Points of View.—A treatise on Phy written from two different points of view written from the standpoint of the dissectin ing the body simply as an aggregate of or to be named and then described as to their several functions; or, (2) it may regard the body as a living organism, assimilating aliment and manifesting the phenomena of life and growth. In other words, there may be an abstract or descriptive Physiology written by the mere anatomist; and a concrete or living Physiology like Jean Macé's History of a Mouthful of Bread, which shows us the human machine in motion with its organs actually doing their correlated work. In a similar manner there may be two Psychologies, the abstract or descriptive, and the concrete or living; either a display of isolated functions or a picture of the living organism manifesting a group of correlated activities. It is only a Psychology of the second kind that can be directly and largely useful to teachers.

Motive and Will.—The art of control is based on the handling of motive. He who can control another's motives governs his conduct. It is commonly thought that the sole constituent of motive is feeling, but it is more correct to say that the antecedent to an act of the will may be partly if not wholly intellectual. It often happens that desire strongly

MAJOR MOVEMENTS OF THE MIND IN THE ACT OF LEARNING.

I.	II.	III.	IV.	V.	VI.
Motive and Will.	Attention. Concentration.	Acquisition. Retention. The "Portative" Memory. Apprehension	Reproduction and Re-presentation. Recollection.	Elaboration. Assimilation. Thought Proper.	Character, Habit, Opinion, Power. The "Assimilative" Memory. Comprehension.

INTERPRETATION.

First Reading.—Through *motive* we affect the *will*, and through an act of the will the mind is brought into a state of *attention* which is the condition of *acquisition*. Knowledge that has been *acquired* and *retained* must be *reproduced* and *re-presented* in order that it may be *elaborated* and thus transformed into *character* and made a permanent possession of the mind.

Second Reading.—The final purpose of the teacher's art is *character*, and character implies the incorporation or *assimilation* of knowledge that has been *re-presented* to the reactions of the mind. This *reproduction* and *re-presentation* of knowledge implies that it has been *acquired* and *retained*, and for these purposes the mind must be brought into a state of *attention* or *concentration* through an act of the *will* which has been affected by some *motive*.

impels us to a certain course, but that reflection or reason countermands this order, and either assists our purpose or gives a different direction to our conduct. In other cases reason reinforces feeling and then the motive has double power. So far as can be discovered, brutes are governed entirely by feeling, and savages and mere children very largely so; but as man rises to higher and higher states of culture, his motives become more and more of the intellectual type. In the education of motive and will the aim should be to bring the feelings under the control of the judgment, to enlist them in the service of right reason, or to make larger and larger additions to the purely intellectual element in motive.

Attractive and Propulsive Motives.— The stimulants to the will are either pleasurable or painful; they either invite us forward by placing some hope before us, or they push us on by placing some fear behind us. Sometimes we are carried forward by the combined power of these two forces, one pulling and the other pushing, as when a train of cars is carried up a grade by two engines, one in front and one in the rear. This combination of motives is seen in a well ordered graded school where the hope of promotion is reinforced by the fear of de-gradation.

One of the most widely diffused of motives, and one of the most easily invoked, is the *desire to please.* The basis of this motive is respect or affection. It is easy to obey the commands of those we love. A teacher who has made himself loved and respected may call his pupils wherever right reason directs them to go.

Pleasure or profit in prospect is another motive of the attractive sort. By connecting the hope of some future enjoyment or profit with even a burdensome task, the pupil

zealously applies himself to it and will require no stimulation of the propulsive sort. Is it an anticipated delight to read Virgil in the original? Then the pupil will make light work of the etymology and syntax that lie between him and his promised enjoyment.

Skillful teaching will develop a third motive of this class which Mr. Bain has happily called *intrinsic charm*, a feeling developed by the pupil's contact with the book or the subject, as when a work of fiction is read with a rising tide of feeling, or when the pursuit of some science throws the mind into a state of pleasurable activity. The rise of this motive is dependent on the pupil's ability to understand and appreciate the subject of his study; and it is at these points that the intervention of the teacher is required, not indeed to relieve the pupil of effort, but to make his efforts successful.

But attractive motives will not always avail, and so it sometimes becomes necessary to resort to painful stimulation. Motives of this sort take the form of apprehension, dread, or fear, and conduct is determined by the effort to escape some pain or suffering, actual or imminent. Such motives are not always debasing, for there are noble fears and noble sorrows; but in the main, motives of this sort are depressing and expensive. A hope is always recuperative,—it adds sensibly to our powers of conquest or of resistance; but apprehension, dread, and fear sap our strength and becloud our intellectual vision.

Loss of favor, loss of standing, loss of privilege; rebuke, censure, reproof; physical suffering in some form or degree; these are forms of painful stimulation which must be employed as motives when other and better means fail.

In the use of motives the following rules are to be observed:

1. Let the first and main resort be to motives of the attractive sort; but rather than fail to move the pupil in the line of duty, resort, if necessary, to some form of painful stimulation, but the mildest that will overcome the resistance offered.

2. Resort to the highest motive that is operative in the given case; but resort to lower motives rather than fail in your purpose.

Attention; Concentration. — The *Parable of the Sower* lends itself to a happy interpretation in pedagogy. Often the more difficult half of teaching consists in preparing the mind to gain knowledge by the exercise of its native powers. Just as the soil and the seed are joint factors in the production of a harvest; so the seeds of knowledge must fall into a mind that is rich, mellow, and responsive, if teaching is to be followed by its proper results. The ideal state of mind for the pupil is that of eager expectancy, of intellectual hunger, and of keen relish. Very often these conditions are to be created by the teacher, and in this capture of the attention and in this excitation of zeal he needs the delicate tact and persuasive powers of the orator. The bane of many school-rooms is a lazy listlessness that is almost a school vice, and a prolific source of failures in teaching is the teacher's inability to summon and hold the attention. When a deft handling of motive has given the mind the habit of attention, acquisition and retention will almost take care of themselves.

Acquisition and Retention. — The process of photography illustrates some of the higher mysteries of teaching. A surface made delicately sensitive to light; the careful focusing of the object; the incorporation of the image into the sub-

stance of the plate; its faithful preservation and prompt restoration,—these typify analogous processes in the art of learning; and if this plate could receive and hold an unlimited succession of impressions, and were endowed with the further power of modifying and combining them, the analogy would be little less than perfect. By a singular recoil from an old error this conservative power of the mind has fallen into great discredit; but on it is dependent the very possibility of education. How to increase the mind's power to acquire and hold is one of the main problems in pedagogy; and it is reassuring to reflect that we have done the most for these powers when we have made the attention alert and vigorous by a wholesome stimulation of the will.

The Grounds of Knowledge.—The original ground or source of knowledge is experience, but when the results of experience have been capitalized and embodied in symbols, language becomes a secondary source of knowledge. Most of the knowledge which the student of to-day is expected to acquire must come from the interpretation of books, and one main purpose of the school is to teach pupils the art of interpreting written composition. Starting from the fact that experience is the original source of knowledge, theorists have tried to give plausibility to the doctrine that learning should be a process of rediscovery. It is sometimes forgotten that in some subjects, as history, a resort to experience is impossible; that in others, as geography, learning by experience is limited to such a narrow field as to be practically inadmissible; and that in all cases where such a method is theoretically possible, it is actually impracticable save as a diversion or an expedient for introducing the student into some of the processes of scientific discov-

ery. Mr. Bain judges this hypothesis correctly when he pronounces it "a bold fiction."

Reproduction, Re-presentation, Recollection. — What is actually before our minds at any given moment, in the way of knowledge, is but a very small fraction of what we really know. Our minds not only have latent power but latent knowledge, and a proper stimulus may at any time call into consciousness images, ideas, and thoughts which have been lying dormant, it may be for years. In revery, such thoughts and images reappear in slow procession; and at other times they flit across the field of mental vision and then disappear as rapidly as they came. But by an effort of the will past states of consciousness may not only be revived but may be held steadily before the mental vision for analysis, comparison, and comprehension. In the rapid flow of mental life first presentations are necessarily vague and crude; but they are held by the portative memory till the moment of review and revision comes, when they are re-presented for elaboration into something better fitted for the mind's higher uses. This reappearance of old matter in consciousness may occur indefinitely, as the perfecting of a thought may require its re-presentation for the thousandth time.

Elaboration, Assimilation, Thought Proper. — All the processes thus far described are merely preparatory to the one now to be considered, — elaboration or thought proper, which is the characteristic function of the mind. These subsidiary processes lead up to the accumulation and preservation of material for the mind's higher uses, whose real power is manifested only as it reacts on this aliment in the way of elaboration and transformation. This is the field for the highest display of the teacher's art; it is the capital

processes included in this synopsis.
r type stops with mere acquisition;
pil's mind by aiding him in trans-
rial into character, habit, opinion,
l accumulated in the stomach contributes nothing to the nurture and growth of the body save as it is caused to pass through a series of upward transformations; so knowledge that has been accumulated lies inert in the mind, almost as a foreign substance, unless it is made to submit to the reactions of thought proper. In the main, these reactions consist in reflecting, judging, and reasoning.

Mode of Reaction. — The initial movement of the mind as it deals with the matter re-presented and brought within the range of its activities is by way of resolution or analysis; and the complementary movement is reintegrating or synthetic. In these respects the analogy between mental growth and physical growth is almost perfect. In both cases the movement is first from aggregates to elements, and then from select elements to aggregates of a higher type. To begin with mere elements in either process is "unnatural" in the best sense of this term.

Teaching that stops with the mere analysis of a presentation has a large value even though it go no further, for the elements left by a correct analysis have a natural tendency to arrange themselves in new combinations.

The Teacher's Instrument of Analysis. — This instrument is interrogation. By deft questions the pupil's mind is directed from point to point of an aggregate till the whole is virtually resolved into its essential parts, and when these are once discerned the obscure aggregate is instantly trans-

formed into an aggregate that is clear,—a mere glance of the mind sufficing for the synthetic effort.

Let this aggregate be taken as an example: "The principle of similarity is the law of gravitation of the intellectual world."

"What two things are included in this statement?" "The principal of similarity and the law of gravitation." "What is the effect of this law?" "I do not know." "Suppose the earth were to be partially released from this law, what would begin to happen?" "Objects would begin to fly from its surface." "Before they had gone far, suppose the law to be restored, what would then happen?" "These objects would be brought back to the earth." "What, then, is the general effect of this law?" "It binds parts into a whole."

"Now, what is declared in the statement quoted?" "That the principle of similarity plays a part in the intellectual world similar to the part played by the law of gravitation in the physical world." "Do you now see that this is true?" "Not yet." "Suppose the mind had no power to discover resemblances in what it knows." "Now I see. This principle allows us to classify our knowledge, and so reduces it to unity." In this way an abstract proposition has been *understood.*

I have given this illustration at some length, because it is typical of the processes by which the pupil is to be assisted in the art of thinking. He must be taught to reflect, and reflecting is hardly more than asking one's self questions.

Memory.—It may not be correct to say that there are two memories, as the "Portative" and the "Assimilative," though these are very convenient terms; but there are cer-

tainly two degrees or two forms of memory, the one preceding elaboration and the other following it. Previous to the exercise of this, its higher function, the mind holds the crude materials for thinking; and when this process has been completed it also holds the finished products of thought. In the first instance, these acquisitions are much like foreign matter, almost as distinct from the mind itself as food is from the stomach that holds it; but by the process of elaboration this material is transformed and is then held in the mind by a sort of organic registration. Oftentimes this transformation amounts to a loss of identity more or less complete; and knowledge may reappear as opinion, or as emotion, just as food may reappear as tissue, or as muscular power.

May one Memorize what at the Time he does not Understand? — This is a much mooted question in pedagogy, and is usually answered very absolutely in the negative. But this answer is contradicted by the plainest facts of the intellectual life. The impressions left on the mind through sense activity, — for example, the numberless sights and sounds that confront us at every turn, differ in no essential respect, so far as memory is concerned, from verbal statements learned from a book; but no one would presume to assert that a given sight, as of some natural phenomenon, should not be impressed on the mind and there held by the memory, save as it has been previously understood. The fact is, that such an understanding is impossible save as the impression has been previously made. The same thing is true of a sentence, a poem, or a definition; in some form, or in some degree, it must be held before the mind by an exercise of its conservative power as a preliminary condition of its being examined and understood. The

effort to understand a thing presupposes that this thing is already within the range of the mind's activities, and it is only by some form of memory that it can be brought and held there while the inquest is in progress. It is not so much an over-use of the memory, as an under-use of reflection and reason, that is to be deplored. In the old education the exaggerated belief in the value of memory was no doubt a superstition; but in our recoil from this error we have fallen into a new superstition no less dangerous.

The Memory of Ideas and the Memory of Words. — After we have read a book, or listened to a lecture, we may be able to reproduce the general scheme of thought, but may not be able to recall a single verbal statement from either book or lecture. What is in our mind is a train of ideas, and if these ideas are at all fixed by words, these words are ours, not the author's or the speaker's.

If instead of merely reading the book or listening to the lecture we had learned a paragraph *verbatim*, the thought could have been reproduced in the exact form in which the writer or the speaker had embodied it. This is what is called *learning by heart*, and is the practice that is so generally condemned.

The essential difference between these two processes is this: while in both cases the thought is held and transported by means of words, in the first these words and sentences are more or less vague and uncertain, almost indeterminate, while in the second they are fixed and definite, — the thought has a form all its own, and this form has a content all *its* own. As this doctrine affects teaching, the practical question is this: In what cases will the loose memory of words suffice, and in what cases does exact memorizing become necessary?

Idea and Term.—"First the idea and then the term," is another of those absolute judgments that discredit modern pedagogy. In all cases where knowledge or truth is communicated by language, it is the term which confronts us first; for to interpret language is to infer thought from form. Reading is evidently impossible on the hypothesis that the idea must precede the term that expresses it. Both in the world of books and in the world of nature idea or thought is the second term of the sequence, term or form being the first. In infancy the child has, doubtless, many experiences for which he has no name; but he has even a greater number of names for which he has no content. In this case sequence from term to idea is just as "natural" as the sequence from idea to term, the only essential thing being that there should be formed an indissoluble union between the word and its content.

"Words come to us as empty vessels which we are to fill from within. Words teach us much, but they teach us less by what is in them than by what is not in them,—less by what they give to us than by what they demand from us."[1]

SUMMARY.

186. Teaching is mainly an applied psychology; but that this science may be largely and directly useful to teachers, they need to study the mind as an active organism engaged in the acquisition and elaboration of knowledge.

187. The successive movements of the mind when directed by the teacher in the work of instruction are as follows: motive and will; attention or concentration; acquisition and retention; reproduction and re-presentation; elaboration or thought proper; the formation of character, habit, opinion.

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[1] D. A. Wasson, in *Atlantic Monthly.*

188. The pupil is governed by determining his motives. Some motives attract and others propel. Among motives of the attractive sort are the desire to please, pleasure or profit in prospect, and intrinsic charm; while loss of favor, loss of standing, rebuke, reproof, and censure, are forms of painful stimulation.

189. In his use of motive, the teacher should observe the following rules: (1) appeal first to motives of the attractive sort; (2) appeal to the highest motive that is operative in the given case.

190. The more difficult half of teaching consists in bringing the mind into a fit state for learning. It should be attentive, alert and expectant.

191. The very possibility of education depends on the mind's power to retain its acquisitions; and this power is best increased by stimulating the attention through fit motives.

192. The two sources of knowledge are experience and books; and one main purpose of the school should be to teach pupils the art of interpreting language as a means of gaining knowledge.

193. In order that the mind's acquisitions may serve their proper uses, they must be reproduced and re-presented for elaboration.

194. The capital and characteristic activity of the mind is the elaborative process, or thought proper. In this process the mind reacts on the presentations made to it, and by reflection, judgment, and reasoning, transforms crude material into organic structure.

195. The mind's mode of reaction is first by resolution or analysis, and then by integration or synthesis. The movement is from vague wholes to clear wholes through analysis and synthesis.

196. The teacher's instrument of analysis is interrogation. By apt questions an aggregate is resolved into its proximate elements, and then a new whole is reconstructed out of select parts.

197. There are two forms or degrees of memory, one that precedes elaboration and one that follows it. The first holds the crude materials for thinking, and the second the finished products of thought.

198. Some degree of memory must needs precede the understanding; and one may commit to memory what at the moment he does not understand.

199. A thought may be held in the mind by a loose form of words, as when we retrace the theme of a book or of a lecture; or it may be embodied in a set form of words exactly memorized. Exact memorizing facilitates both the examination of a thought and its recall.

200. There is no fixed sequence as between idea and term. The only essential thing is that they be brought into an indissoluble union.]

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